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Travelers swing 62-ton center sections into place for new Alton bridge (see p. 10)

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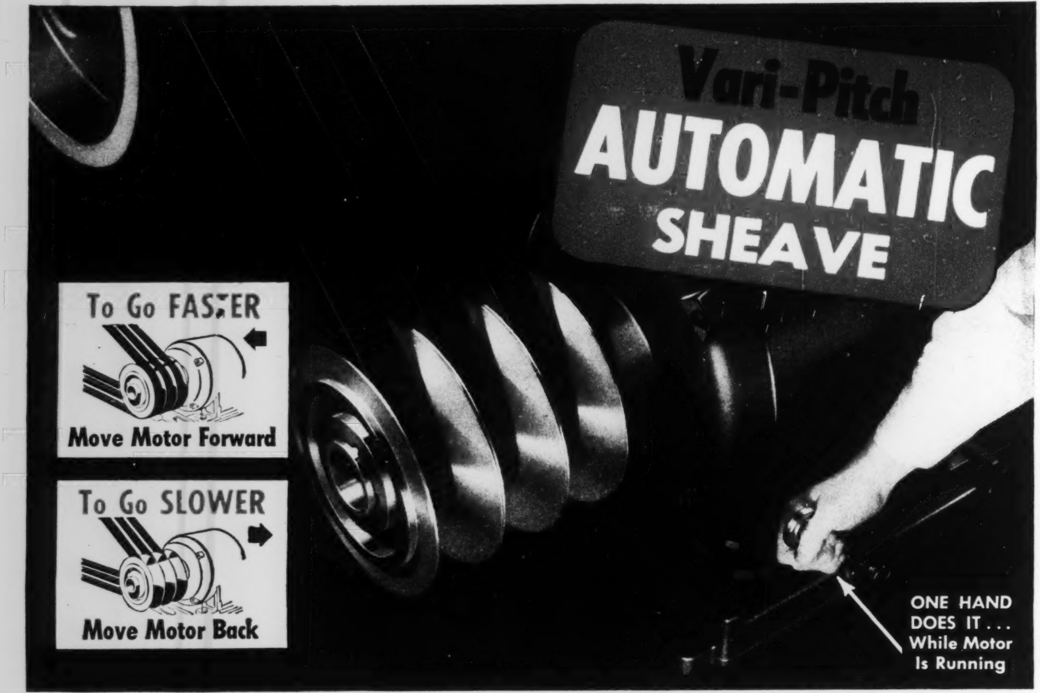

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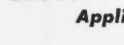

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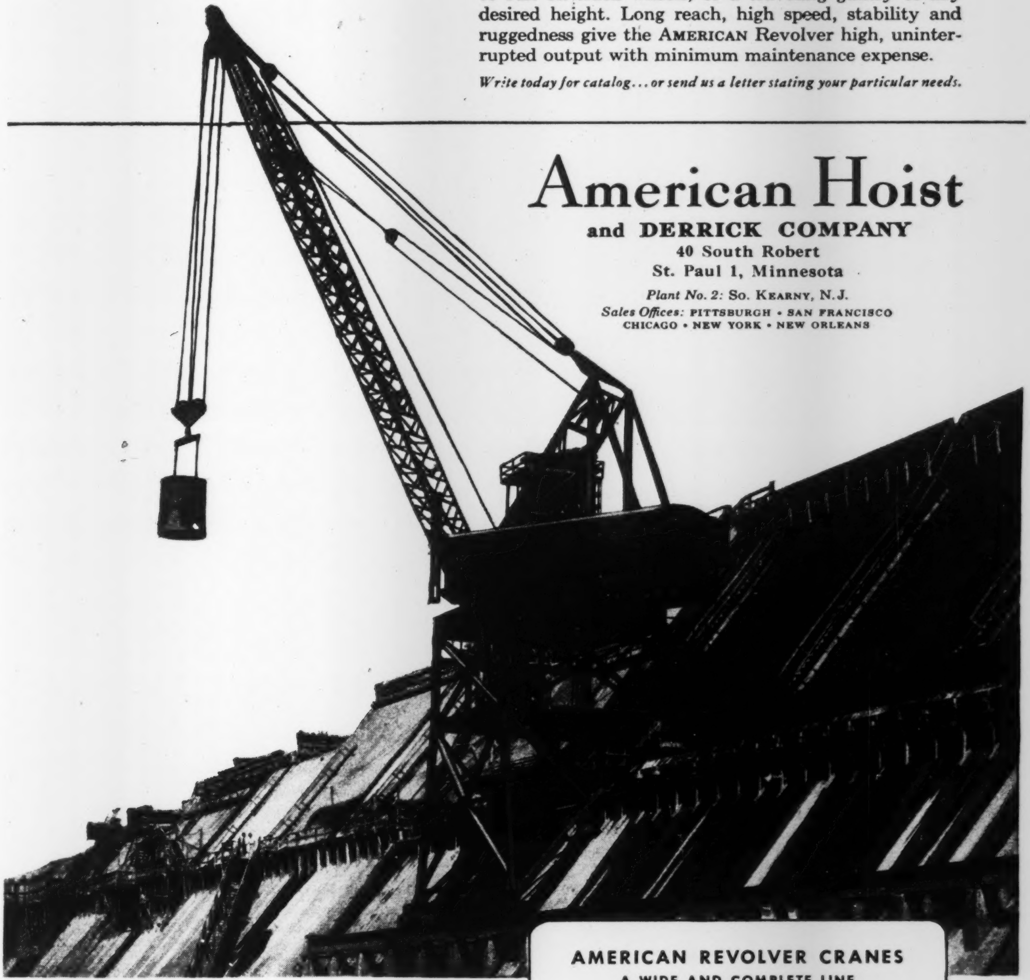

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ENGINEERING NEWS-RECORD

VOLUME 143 AUGUST 25, 1949 NO. 8

WALDO G. BOWMAN
Editor

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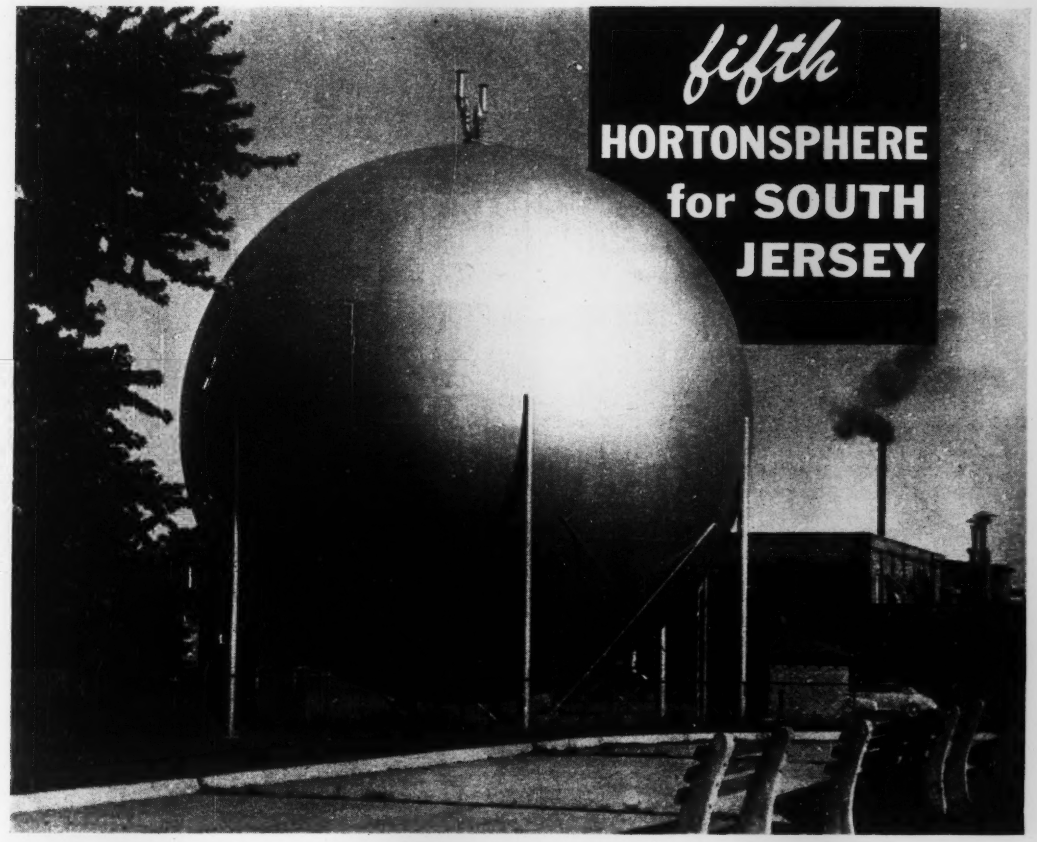

This "SPHERE" helps Egg Harbor improve gas service

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The 5th installation is the 38-ft. 7-in. diam. Hortonsphere at Egg Harbor which is shown above. Like the others, this Hortonsphere gives a much-needed boost to pressures in the pumping mains during peak load periods. This high-pressure gas holder benefits 1,500 consumers in the immediate district by giving them more uniform service at all times.

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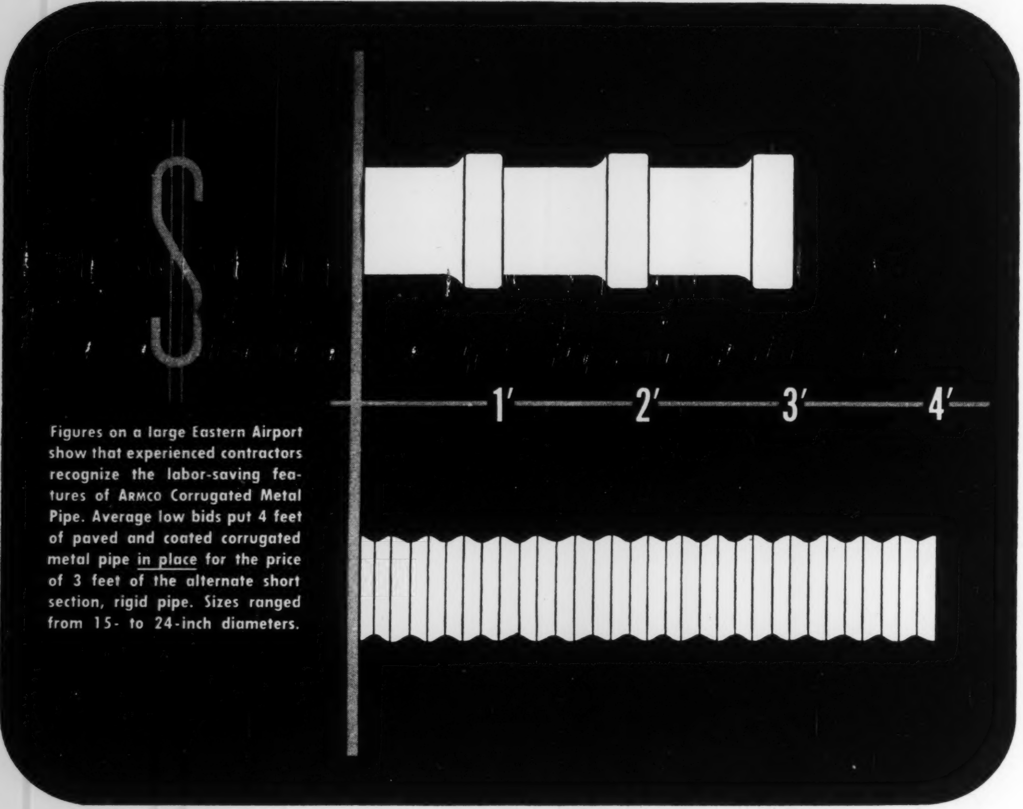

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THE CONSTRUCTION WEEK

MORE MUD IN BIG MUDDY—Close watchers of the Missouri Basin development are convinced that the valley is heaving like a tent with a fight going on inside it—despite the outward show that all hands are the best of friends. Dispute is over the proper height of gigantic Garrison Dam—$188 million key structure of the development program. The Army wants to build the structure high enough to provide a lake level 1,850 ft. above sea level. Opposition claims this would flood 20,000 acres of existing irrigation works, jeopardize Williston, S. D., and force moving of Williston's railroad line nine miles from town. Engineers point to a 23-million-ac.ft. storage at this level, against 17 million at the Bureau of Reclamation-favored 1,830-ft. level. State politicos have jumped into the fight: the state administration supporting the 1,850-ft. level, the Congressional delegation favoring 1,830. Reclamation's Glenn Sloan, co-author of the river plan and chairman of the 10-member Missouri Basin Inter-Agency Committee, got the argument out in the open recently when he favored the 1,830 level during a House hearing—saying he'd like to see the dam at that level for 15 years, then build it higher if facts warrant. Army Engineers immediately tried to get Sloan displaced as chairman at an executive session of the inter-agency group, on the ground he'd damaged the Missouri project. They got nowhere, but the war's on—a la Hoover Commission descriptions.

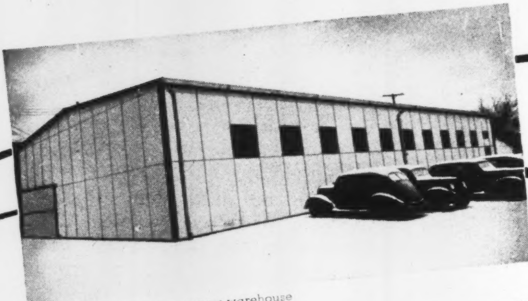
INDUSTRY ON THE MOVE—With its eye on the security of vital industries in time of war, the Army is quietly putting pressure on "exposed" plants along the seaboard, hoping to have their owners move them inland. At the moment—as in the case of an attempt to get Boeing to move much of its production inland—it won't mean too much construction. Existing war-built—but now vacant—plants would be utilized. Eventually, it might mean even more industrial construction in the already-booming inland areas.

BUSINESS AT CURTAIN'S EDGE?—There's a hint of eventual business for U. S. enterprises around the edges of the Iron Curtain. What it might mean to construction, and construction equipment makers, remains to be seen—but the potential is there. The possibility appeared in the issuance of an export license for shipment of a $3,000,000 steel blooming mill to Yugoslavia, to aid that country in its attempts to survive the general Communist blockade against it. In order to insure against possible military use of the new capacity against the U. S., the license will be brought up for review by the U. S. State, Military and Commerce departments, before shipment actually begins about a year from now. Evidence is that this U. S. willingness to help out former Communist stalwarts who have cooled toward the Kremlin might lead to other openings for U. S. products.

WHOSE RIGHT-OF-WAY?—The Interior department has moved for a full court test of a new policy governing grants of right-of-way over public lands to utility company power lines. The ruling—viewed by private power as a step in the government's campaign against it—would exact an agreement to carry federal power on any excess capacity of the utility line crossing public domain, as price of the right-of-way. Immediate case in point is a year-old dispute between Interior and the Idaho Power Co. Interior has charged the Idaho company with "trespass" on public lands in construction of a $3,000,000 transmission line from Boise to American Falls.

DELIVERED PRICE FIGHT CONTINUES—The future of Sen. O'Mahoney's bill to ease the stricture on delivered pricing seems dark enough, according to the reports from the Senate-House group now considering the matter. Supporters of the Robinson-Patman Act succeeded in writing amendments into the O'Mahoney bill legalizing freight absorption. But the amendments made in each house are worded slightly differently—which gives the conference committee a chance to write its own version of how to protect the little fellows against price discrimination. And a majority of the committee doesn't like the amendment. Catch is that on the floor, the Robinson-Patman group probably can command enough votes to kill it if it doesn't like the compromise.

NEW TUNNEL?—Viewing the New York-New Jersey traffic situation with some alarm—but also with an eye on added revenues to support its far-flung activities—the Port of New York Authority is now discussing a third Hudson River vehicular tunnel. The new tunnel—probably a twin-tube affair—would be built somewhere within the three-mile stretch between the existing Holland (Canal Street) and Lincoln (41st Street) tubes. In the last year, more than 42,000,000 vehicles used the two existing tunnels and the George Washington Bridge.



⅜" APAC used as siding on new warehouse of Unistrut Corporation, Wayne, Mich.

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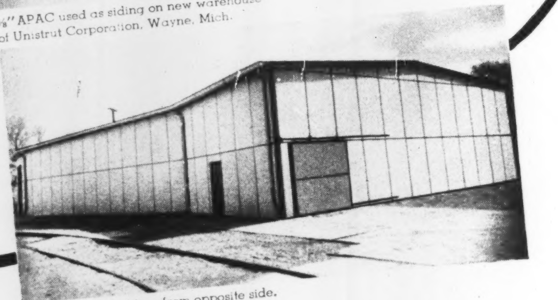

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CONSTRUCTION TRENDS

States Lag Behind Parade

While public agencies on the whole are pushing their construction work to new records this year, the states are lagging. In the first five months of 1949, by reports of the U. S. General Services Administration, successor to the Federal Works Administration, municipal and county contract awards have soared 60 percent and 41 percent, respectively, over awards in the same period last year.

But state contract awards show only a 5 percent increase.

The big reason is that state contract awards for highway work, through May lagged 8 percent behind a year ago. Other classes of state work are up substantially. The volume of awards on state hospitals, for example, is up 300 percent. But highways are a good two-thirds of all the 1949 awards and the decline there is almost enough to offset increases in other kinds of contracts.

Highway activity—by federal, state, and local agencies—apparently is not going to be much larger over-all this year than last. By ENGINEERING NEWS-RECORD'S reports on contract awards, highway work is actually running behind last year. That may be made up somewhat later in the year, of course. But, at best, highway work probably won't top 1948 by more than a few percent.

What's happened, apparently, is that states have had tight budgets this year. In a survey early this year, ENGINEERING NEWS-RECORD found (March 17, '49) states were budgeting 1 percent less in highway funds than they did last year. The shortage of engineers when the states were preparing their programs also exerted a depressing effect.

Construction Booms On

Construction activity through the rest of the year will just about match last year—by estimates of the Department of Commerce. The Department expects dollar volume of work put in place will run to $10.5 billion—just about what it was during the second half of last year.

Heavy construction, meanwhile, is apparently rolling to new records. ENGINEERING NEWS-RECORD'S reports on contracts awarded this year show a dollar volume 19 percent greater than last year. That foreshadows continuing high volume of work in engineered construction. Meanwhile, the Bureau of Labor Statistics reports that builders started 96,000 homes in July. That is slightly more than were started in July a year ago and is enough to mean continuing high activity in homebuilding—and the industries geared to it—through November. It will take that long to finish many of the homes on which work is getting underway now.

All in all, construction is maintaining a fast pace. That it will continue to run very far ahead of last year, however, is not likely on present evidence. ENGINEERING NEWS-RECORD has not revised its earlier forecast of an $18 billion total, which would represent a 4 percent increase over 1948.

Business Outlook Brightens

While construction surged ahead in the first half of the year, general business slowed down or fell off. Retail sales went along on an even keel at about last year's level, but manufacturers cut back production 13 percent, and unemployment climbed steadily, if slowly. Business generally was having a good case of jitters.

Now, however, signs of recovery are strong enough to assure good business through the rest of 1949. Manufacturers' sales turned up in June. Production in many lines—paced by automobiles—is at a high level. The steel industry, after hitting bottom in June, saw orders and production rise in July. Prices of basic commodities, spurred by a sharp recovery in non-ferrous metals, have climbed slowly. The stock market, which has slumped since 1946 while general business has set new records, turned up in July. It reached new highs for the year in mid-August.

Recovery probably won't carry industrial production back to the peaks of last fall, when the Federal Reserve Index reached 195 (1935–39=100). But the index may well reach 180 or 185 before Thanksgiving. With general business good and with students and other part-time workers off the labor supply rolls, unemployment probably will drop from the four million level it reached in July.

Now the big question in the business outlook is: What's going to happen in 1950?

The answer to that—for both construction and general business—depends largely on how much money business plans to spend for new plants and new equipment. When these capital expenditures are high, business is prosperous. Today, the prospect is that 1950 capital expenditures will be close to the 1949 level. Business profits—while down 20 percent or so from last year—promise to be large enough to finance high-level plant and equipment purchases. In addition, contractors, by cutting costs to the buyer as much as 20 percent, have given business the incentive to go ahead with construction.

All in all—barring major strikes in steel, coal, or other basic industries—the prospect is for continuing good business through 1949 and well into 1950.

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EDITORIALS

Building A Greater America

NEXT WEEK'S ISSUE of this journal will commemorate its 75th anniversary. It is an event in which *Engineering News-Record* will not be the sole or even the major participant. For American civil engineering and construction can also count this same three-quarters of a century as the period in which it grew to major stature.

The few railroads, tunnels and bridges, the small number of water-power factories, of sanitary works and water supply systems that existed prior to that time were only of such character as to serve a frontier country. Moreover, the engineering knowledge, the technical skill and even the necessary capital to provide them had come largely from Europe. It was only with the Brooklyn and Eads bridges, the Hoosac tunnel, the first skyscraper in Chicago and the establishment of the Lawrence, Mass. experiment station for sewage and water treatment—to mention a few notable events—that a truly American engineering took root. From that beginning the America of today has been built.

It is an America of which civil engineers and construction men can be proud, one in which their works and those of their predecessors stand out in bold and often beautiful relief. It is stimulating and useful to look back and contemplate these achievements, and next week's issue will provide this opportunity to some degree.

But it will mostly look forward, as engineers and construction men have always had to do. The next half century, between now and the year 2000, beckons the construction man's talents as no period has before. What he has in his inventory of knowledge, methods and machinery to meet his coming tasks is, therefore, of paramount importance. The major emphasis in next week's issue will be on these tools with which to mold a future of satisfying achievement.

During the next half century, that begins in about four months, America is destined to set the pace and provide the leadership for much of the rest of the world. There is in this a tremendous challenge to the civil engineering profession and its handmaiden, the construction industry. This challenge is to build a greater America.

Art For Art's Sake

CONDITIONS ARE SHAPING UP in New York City for a good rousing controversy involving art, architecture and progress. Plans have been drawn to increase the traffic capacity of the Brooklyn Bridge by removing two of the existing six lines of stiffening trusses and doubling the depth of the two outer lines, thus bringing them to the same depth as the inner ones. To the president of the Municipal Art Society such an alteration is as unthinkable as "to change the feet of a Rembrandt painting." He goes on to charge that "traffic has become more important than beauty."

It is too early in the controversy to know whether these are merely "headline" statements or whether the society and its president, to both of whom many good and sensible deeds can be credited in the past, are seriously concerned. In either event, it is too bad that the victim is an inarticulate structure. Were this not so, one suspects that the renowned old bridge would point out that its beauty rests in the magnificent proportions, form and color of its great stone towers, and in the airy tracery contributed by the combination of the vertical suspender ropes and the inclined bracing cables. It would remind its "protectors" that there is no thought of altering these elements of beauty, and that whatever is done to the rickety, rust-eaten stiffening trusses would probably be an improvement. Moreover, the bridge could be expected to add, it was built to be a useful traffic artery, and it would like to return to that high position from its present state of being merely a monument and an obstacle to progress.

Under some conditions traffic is more important than beauty. In the case of the Brooklyn Bridge, however, it seems possible to serve both. Thus, the art-for-art's-sake argument against modernization of the famous structure has a hollow ring.

Force Account Puzzle

CONTRACTORS OF NORTH CAROLINA have assembled convincing arguments against the use of force account construction on the state's secondary road program for which the voters recently approved a $200 million bond issue (see p. 10). The contention that the state is legally bound not to spend any of the bond issue money for construction equipment may or may not be supportable. There should be no question, however, of the contractors' statement that "force account construction should never be employed unless it is positively shown that special and unusual circumstances exist or that private contractors are not available to bid competitively." North Carolina's proposed program would seem to be large enough to handle with competitive bids. And according to the contractors, there are 53 roadbuilding firms in the state employing over 11,000 men and owning over $17 million worth of equipment available to apply to the program. So once again the force account puzzle appears: Why in a country that owes its enviable high estate to private enterprise and the profit motive do governmental bodies, which depend upon taxes, so frequently flirt with governmental operation?

ENGINEERING NEWS-RECORD

AUGUST 25, 1949 VOL. 143 NO. 8

North Carolina purchases road building machinery

Contractors' petition rejected by Governor, Highway Department—Two groups join in petition assailing legality, wisdom of state proposal—Ask court test

By Mack Webb
ENR's Correspondent

North Carolina has approved contracts totaling $4,453,556 for the purchase of road construction equipment. Funds will be obtained from sale of the first $50,000,000 of rural highway bonds of a $200-million authorized bond sale.

That was the latest development, this week, in the state's controversial rural roads program. The next is scheduled for Raleigh this week, when the Carolina Road Builders' Assn. is to meet and consider what action to take.

The contract awards Aug. 19 followed these developments:

1. A protest was filed by the Carolinas Branch of the Associated General Contractors of America and the Carolina Road Builders' Assn., urging an end to the State Highway and Public Works Commission's proposal to buy the equipment.
2. Gov. Kerr Scott rejected the protest with the assertion that whoever "can build the roads cheapest is going to do it."
3. Highway Commission Chairman Henry Jordan expressed concern "that we're going to offer more work than the contractors will be ready for."

Contractors "disappointed"

Road Builders' Counsel Charles Ross expressed disappointment at Governor Scott's rejection of the petition, and added that "we think (he) has minimized the matter in his thinking." Ross said the initial cost of the machinery is no cause for concern, but that it would entail another $5 for every dollar in machinery to care for the equipment.

Earlier, Governor Scott had said it probably would be necessary for the state to build some of the projected roads itself. He said the state had no intention of buying $20,000,000 worth of equipment, as it might do under the attorney general's opinion validating the purchase. He said contractors had misconstrued the opinion, and had become "unduly alarmed" over the situation. The contractors' petition called the purchase an "unlawful and unauthorized diversion" of funds.

The contractors' petition notes that the legislation provides that all bond proceeds are to be used "exclusively for the purpose of building and improving roads." It cited laws under which "it is clear that with respect to construction, the (Highway) commission has general supervisory powers only and is required to let contracts for the construction of state highways."

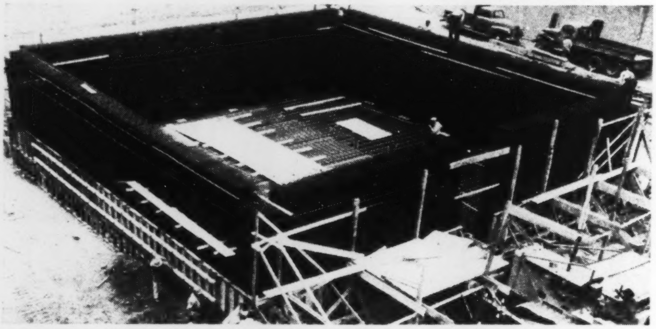
Opinion discounted

The attorney general's qualified approval of the equipment-purchase proposal drew fire from the two contractors' groups. Their position held his ruling "subject to challenge:"

"We call your attention to the fact that if you proceed with the authorization of bonds based upon the Highway Commission's resolution of their express purpose to use 10 percent thereof (of the first $50,000,000 authorization) for machinery purchases, this would be an invitation to any taxpayer who might like to block the issuance of the bonds to institute a suit based upon this resolution. We wish expressly to disassociate ourselves from any movement calculated to defeat or delay issuance of the bonds and the inauguration of the secondary road program, but we are concerned only with the desire to see the bond money expended in accordance with the purposes for which the act was conceived and approved."

Industry's ability demonstrated

Highway contractors and material dealers, the petition went on, represent a legitimate free enterprise which has "demonstrated (its) efficiency at every level of government . . . both in peace and war." Highway construction by government force account, the petition asserted, "is an emergency procedure. . . . The experience of all states and the federal government has been that force account construction should never be employed unless it is positively shown that special and unusual circumstances exist or that private contractors are



SEATTLE BANK VAULT, for the new Federal Reserve Bank there, will be one of the country's largest. It will be 54 ft., by 54 ft., two stories high, with more than 400 tons of steel webbing in its 2.5-ft. thick concrete walls. Concrete shell will be lined with steel. Vault is being constructed independently of the rest of the building. Kuney-Johnson Co. is the contractor. Work is scheduled for completion in the fall of 1950.

not available to bid competitively."

That such contractors are available to bid competitively, the petition went on, is borne out by a recent survey of 53 North Carolina firms. On August 15, the survey showed, there was $17,699,400 worth of road building equipment available for work in North Carolina. The survey showed also that at every highway letting for more than six months, bidding had been keen enough that prices averaged 10 percent below the commission's estimates. And the petition went on:

"The purchase can not be justified to meet the state's own needs as the commission has purchased, since the war, more than $12,000,000 worth of new equipment, and its latest inventory shows that it has usable equipment 60 percent greater than in 1942."

See all roadbuilding absorbed

Petitioners pointed out that if the state bought $5,000,000 worth of construction equipment, the commission would have to maintain a force account program of at least $25,000,000 yearly to use the machinery economically.

"When the bond money is gone," the petition asserted, "this huge construction organization, attached to the ever-increasing taxpayer's load with its powerful political pressure, would absorb all possible highway construction."

Force account work, the petition added, would cost the state much in lost tax revenues. And it declared that a resort to force account would not jibe with the state's attempts to use a "protect free enterprise" theme in its promotion of more industrial migration to North Carolina.

◆

Cuban bankers offer public works financing

Cuban bankers apparently want to finance any $100 million public works program the government undertakes.

They have offered, according to the New York Times, to underwrite a government bond issue of $35,000,000 with an option for two yearly successors of $32,500,000. The proposal was for 25-year bonds, to be sold to Cuban investors, although participation by American and Canadian bankers reportedly would be invited.

Word last week was that negotiations were going on in New York with the First Boston Corp., an investment banking house, for a $40,000,000 to $50,000,000 issue, (ENR August 11, p. 23).

NLRB deciding on primary picketing in construction industry cases

Determination between secondary boycott and peaceful picketing protected by law involves numerous fine legal points

When is picketing a secondary boycott banned by the Taft-Hartley labor law? And when is it primary picketing protected by the law?

Several decisions have been handed down recently on this point in the construction industry.

In one, involving Ryan Construction Co., Evansville, Ind., the National Labor Relations Board held that CIO picketing of a plant on which the company was building an addition was not a secondary boycott even though AFL building trades workers refused to go through the picket lines. The CIO had a wage strike against Bucyrus-Erie Co., operator of the plant where Ryan was building.

Picketing enjoined

In behalf of the Ryan firm, NLRB General Counsel Robert N. Denham obtained an injunction last August against the picketing on the ground that it was a secondary boycott, prohibited by Taft-Hartley.

The board said this situation was not a secondary boycott because the picketing was at the premises of the employer with whom the CIO Electrical Workers had a dispute.

Almost the same principle was applied by an NLRB trial examiner in recommending dismissal of secondary boycott charges against the International Brotherhood of Electrical Workers, Local 16, AFL.

In that case, charges were brought against IBEW by the Al J. Schneider Co., Inc., Shively, Ky., building contractor on a school house at Owensboro, Ky.

The union picketed the school building in protest to the Owensboro Board of Education about letting an electrical contract to a non-union firm, Frank Abrams Electric Co. Building trades employees stayed away from the job.

The Federal District Court denied an injunction sought by Denham.

The trial examiner held that the IBEW was taking primary action against the Abrams firm, and that the secondary effect this had on the building contractor did not make it a secondary boycott.

Again this principle, with a slightly different touch, was applied by another NLRB trial examiner in a case involving four dwellings under construction in Denver.

He recommended dismissal of secondary boycott charges on the ground that picketing of the entire job by the AFL Building Trades Council as "unfair" was primary action, even though it hurt the general contractor employing union labor. Cause of the picketing were two subcontractors—plastering and roofing—who employed nonunion men.

In the fourth case, an NLRB trial examiner held the AFL Building Trades Council in Denver guilty of a secondary boycott for inducing two electricians and two plumbers not to install a soda fountain made by the Grauman Co., Denver, which was on the council's "unfair" list. Included in the charges are IBEW and plumbers locals.

The electricians were employed by the Acme Electrical Co. and the plumbers by the McCarty-Johnson Plumbing and Heating Co.

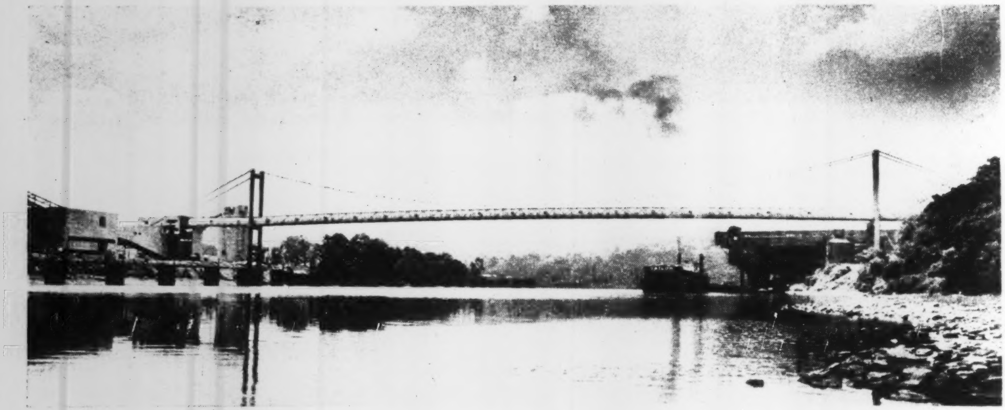
This case, yet to be decided by the full board on its merits, has taken some unusual turns since it began more than a year ago. First a Federal District Court refused to grant injunctive relief, citing as its reason the fact that interstate commerce had not been affected in this case. Denham has appealed the decision.

Recommends dismissal

Then the trial examiner recommended dismissal of the secondary boycott charges on the ground that under the court's decision, the board lacked jurisdiction. The board overruled the examiner and instructed him to hear the evidence and make a recommendation, which he has now done.

Meanwhile, the Circuit Court of Appeals in Denver has just overruled the District Court's dismissal of the injunction petition on jurisdictional grounds. The lower court has been ordered to consider Denham's request for an injunction.

The higher court's views on jurisdiction may be significant. The court held that even if particular acts in a union's secondary boycott campaign have only an imperceptible effect on commerce, they may nevertheless be enjoined if such practices would seriously disrupt commerce "if they were expanded into a general pattern throughout a substantial part of the country."



Suspension bridge moves coal to plant

Nearly everything about a new suspension bridge across the Monongahela River at East Fredericktown, Pa., is unusual. The live load is coal, moving at a speed of 600 ft. per min. on a 60-in. wide belt, inclosed in a 20-ft. wide Quonset-type housing. One end of the bridge is adjacent to the coal mines and, to reach them, the belt conveyor has to be carried through the north anchorage. The opposite end of the bridge connects with the largest coal processing (separating and cleaning) plant in the world, recently completed by the Jones & Laughlin Steel Corp.: capacity 2,000 tons per hr. And the bridge anchorage at that end has its shoreward portion serving as the foundation for a part of the raw coal bin building whose dead load is figured as a part of the anchorage weight.

Nor is the bridge itself lacking in novelty. The approaches to the 726-ft. main span are carried on through-trusses, the unloaded backstay spans being 170 and 251 ft. The cables consist of twelve 2-in. dia. prestressed bridge strands, which are clamped at the mid points of the side spans to dampen vibration in the unloaded backstays from live and wind loads. The floor system consists of a stiffened ⅜-in. steel plate framed into floorbeams on 10-ft. centers. The floor plate acts as the web of a horizontal girder carrying 80 percent of the lateral forces; the remaining 20 percent is carried by a K-truss top-lateral system. Stiffening trusses and side span trusses are 10 ft. deep.

The towers are of cellular stiffened plate construction, 127½ ft. high. A cable-sag ratio of 1:13.83, a stiffening-truss-to-span ratio of 1:72.6 and a width-to-span ratio of 1:36.3 result in an unusually stiff structure, necessary for the service required.

F. H. McGraw & Co., New York, is engineer and constructor of the entire project, one of the major units in Jones & Laughlin's large capital improvement program. Frankland and Lienhard, consulting engineers, New York, designed the bridge, which was fabricated and erected by the American Bridge Co.

Three-job experiment aims at lower road costs

An experiment designed to cut down engineering work in road grading will be made by North Carolina's Highway Commission.

The new plan, which follows a conference between state officials and representatives of the Carolina Road Builders' Association and the Associated General Contractors, should speed work on the state's $200 million road program. On three test jobs, for which bids should be opened soon, the commission will contract for earthwork on a mileage basis. Contractors will submit bids estimating the cost of cutting and filling roadbeds for several miles. This estimate will be final.

State officials believe that if the new plan works, it will enable a 50 to 75 percent speedup in the grading phase of its task. If so, more roads could be planned and built in a given period. Personnel ordinarily assigned to this could be used elsewhere.

At present the commission pays for grading on a cubic-yard-handled basis. Bids follow estimates by the commission's engineers and the contractors. When work is done, highway engineers check their estimates.

◆

Broaden county road work

Illinois now permits counties to use state-provided funds for the construction or maintenance of roads within towns and cities. Construction or maintenance of federal-aid roads within municipalities also is permitted with these funds. Heretofore, counties could spend highway funds they got from the state only on roads outside municipalities. Gov. Stevenson has signed the bill.

Kentucky pipeline law declared unconstitutional

A 1948 Kentucky law easing condemnation procedures for pipeline companies has been declared unconstitutional by Kentucky courts.

Basis for junking the law was the fact that landowners got no chance to question damages before condemnation, and the fact that a landowner must give bond before he can appeal, forcing him to pay to obtain redress.

The judgment arose from work done in Jefferson County by Williams Brothers, Tulsa contractors, on an 860-mi. Texas-Ohio line for the Texas Gas Transmission Co. The decision doesn't leave the company without recourse since, in effect, it reinstates the earlier condemnation law. That requires a jury trial in county court. Much work on the line remains to be done in Kentucky.

Dallas opens section of Central Expressway

First section of Dallas' Central Expressway—a two-mi., $7,651,000 job—was to be opened August 19. It's the forerunner of a 10-mi. highway whose total cost is estimated as high as $22,600,000, and which will take another three and one half years to complete.

Another section is under construction now, scheduled to be opened in a few months. An overpass, contract for which is expected to be let next month, will be the next project started.

The city is expected to spend about $12,000,000 for its share of the project, which will be financed also by state and federal governments. Most of the city's funds will go for right-of-way. All federal and state funds will go for construction.

Bounding the expressway on either side are service roads, by which access to the expressway proper is had. Traffic flows one-way on each of the four roads, and is switched from service road to expressway by paved strips which cross wide separating strips. Asphalt lanes along the expressway provide emergency parking space.

◆

Jersey Turnpike builders must qualify to bid

Contractors who bid on New Jersey's forthcoming turnpike will face the same pre-bidding qualification procedures which are used by the State Highway Department.

And since the Turnpike Authority expects to take bids about Dec. 15, it urges those who want to share in the work to file the qualification statements no later than mid-October. These forms may be had from the New Jersey Turnpike Authority, State House, Trenton.

The 13-mi. project will involve bridge foundations, superstructures, grading, drainage, pavement, buildings and electrical, plumbing and mechanical equipment contracts.

◆

USBR to show estimates

The Reclamation Bureau has adopted a long-time policy of the Army Engineers—public inspection of the cost estimates made by USBR engineers when bids on a job are opened. The change in policy followed a recommendation by the Senate Appropriations subcommittee that this be done.

SIXTY-FOUR-YEAR-OLD BRIDGE, across the Shellrock River, near Plymouth, Iowa, collapsed when the truck in the foreground attempted to pull the automobile, off the bridge. The automobile hit one of the upright members. (Wide World Photo)

Financing plan evolved for prefabs

An attempt to by-pass one of the classic hurdles which has worked against the spread of prefabricated housing has been adopted by two of the better-known manufacturers.

Gunnison Homes, Inc., and Lustron Corp., both have taken on a financing plan worked out by the Galbreath Mortgage Co., Columbus, O. There's hope that the plan, by mitigating distribution and finance problems, will make it possible for prefabs to obtain wider markets. Galbreath's interim financing device is an attempt to get some of the inventory load off dealers' backs without saddling it onto the manufacturers.

The hitch has been that mortgage lenders don't like to advance cash for prefabs before they're finished—or nearly so. This leaves dealers in the position of having to carry the paper through inventory and building stages. That necessity has made it hard for the manufacturers to get—and hold—dealers.

Under the Galbreath plan, the purchaser of a prefab would apply at his bank for a mortgage. If the bank approves, it agrees to pay the builder-dealer when the house reaches a stipulated stage. The buyer and the dealer then sign a mortgage assignment, which authorizes the bank to pay Galbreath enough of the mortgage money to cover the cost of the prefab delivered to the dealer. Then the dealer sends the mortgage papers, an application for interim financing and a note made out to Galbreath to the manufacturer.

If the manufacturer approves the application for interim credit, he ships the house and sends the papers along to Galbreath, who then pays the manufacturer for the house. Then when the buyer's bank is satisfied with the construction, it sends a check to Galbreath covering the advance and interest on the interim loan.

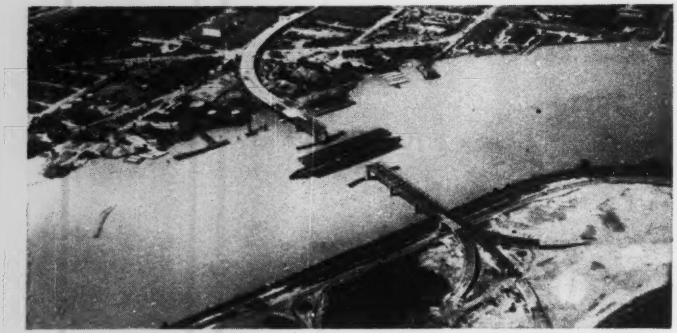
Galbreath has no idea of confining its financing procedure to the two prefab makers who have already signed up. Any manufacturer who can meet the specifications can sign up for the financing plan.

◆

Big bridge building task faces Virginia department

Virginia is deep in a bridge building and repairing program which is to affect more than half of the 9,000 structures in its highway system. Its Highway Department reports satisfactory progress during the last fiscal year.

Sixty new bridges were added to the primary system during the year, and another 55 were under construction. Work aimed at additional width and carrying capacity was under way on 25 more. On the secondary system, 219 were built and 1,118 were repaired and strengthened during the year. Plans for the secondary system contemplate the raising to 10 tons minimum capacity of every bridge on the system. To priority goes to rebuilding undercapacity structures on the secondary system.



NEARING COMPLETION at Washington is the South Capitol Street bridge across the Anacostia River. Approach on the far side of the stream connects with South Capitol Street. In the foreground are approaches from the eastern part of the city and Maryland. (Wide World Photo)

Design, material tested on main road

New Jersey is completing a 4.5-mi. experiment on one of its main highways in an attempt to find both the design and the material which will stand up best under today's mounting transportation volume.

Scene of the experiment is one of the few remaining two-lane stretches of its Jersey City-Camden main highway. Two new lanes, and a wide center safety island, are well along. Resurfacing of the two existing lanes will complete the job. So there'll be data from old roads and new, plus that yielded by other deliberate variations.

To compare varying material depths and mixes, the new lanes have six ¾-mi. sections, one each of these designs:

Ten in. of concrete reinforced with a mat of steel rods, with expansion joints at 78-ft. intervals.

Eight in. of reinforced concrete, 89-ft. intervals.

Ten in. of unreinforced concrete, with surface markings or "dummy-groove" contracting joints at 15 ft. intervals.

Three in. of bituminous concrete on eight in. of unreinforced concrete, dummy-groove joints at 12 ft.

Four in. of crusher-run stone, four in. of macadam base course, three of penetration macadam, three of bituminous concrete.

Four in. of crusher-run stone, four of macadam base, three of penetration macadam surface course. This section is referred to as stage construction for bituminous concrete surfacing when the pavement is stabilized against settlement.

The existing pavement has 56-ft. slabs separated by expansion joints. Many slabs have cracked. In the rebuilding, the road will be "mud-jacked" to grade and widened to 22 ft. Resurfacing will be done with the idea of determining the minimum thickness needed to prevent cracks above joints and in the underlying pavement, so the materials will be varied in depth. Wire mesh also will be used in part of the resurfacing to see whether it prevents cracks. Bituminous concrete will be used in 3-, 4-, 5- and 6-in. thicknesses on alternate links. And one section will be composed of five in. of granular sub-base, six in. of macadam, three in. of penetration macadam and two of bituminous concrete.

◆

Bureau invites comment on wire rope code change

Industry comment and approval of a revised Simplified Practice Recommendation, R198-43, Wire Rope, is solicited by the Bureau of Standards.

The proposal adds a new table and further reduces the variety of stock items. It includes sizes, constructions, grades and breaking strengths of the vast majority of wire rope tonnage. General adherence to the 21 tables it contains will reduce the number of stock items 33 percent, from 987 to 657. The major production and use of wire rope is covered by four different rope-constructions. Reduction in these stock items is 48 percent.

Interested parties are invited to ask for copies of the revision from the Commodity Standards Division, National Bureau of Standards, Washington, 25, D. C.

D. H. Dickinson resigns, New Hampshire road chief

Daniel H. Dickinson, 71, suspended chief engineer of the New Hampshire Highway Department, resigned Aug. 19. He held the job from 1932 until his suspension five weeks ago by Commissioner Frederic E. Everett, on Gov. Sherman Adams' orders.

Governor Adams told ENGINEERING NEWS-RECORD that an investigation of Dickinson's activities on the engineering contract for the $7,500,000 toll road between Portsmouth and Seabrook disclosed "errors of judgment." No cause for criminal action was found by Attorney General W. L. Phinney, Adams said.

Findings of investigation

Dickinson had been a division engineer for the Massachusetts Highway Department before going to New Hampshire. Also, he had been associated with Charles Morse, of Haverhill, Mass., as a consulting engineer. The investigation, according to the governor, disclosed that:

1. The state paid about $103,000 in excess of actual cost of engineering plans for the roadway design of the toll road.
2. Dickinson selected Parsons, Brinkerhoff, Hall and McDonald, New York, as consulting engineers, with an understanding that Morse be retained as an associate.
3. Morse received $111,651 for the design and the entire fee for supervision of the roadway, or $15,000. Morse also included himself on the reimbursable payroll for the supervision, at $500 monthly.
4. Morse has agreed to repay the supervision salary.
5. Dickinson received $6,732 from Morse between May, 1947, and December, 1948, allegedly for services rendered Morse on Massachusetts and New Hampshire town jobs.
6. Dickinson began planning the toll road in October, 1946, suggesting that the New York firm say nothing of it to Commissioner Everett.

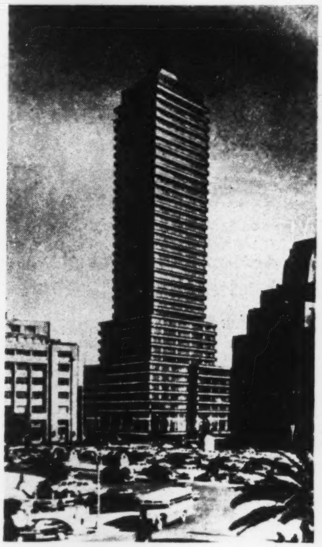
Parsons, Brinckerhoff, Hall and McDonald said this week it refused to employ Morse without receiving written approval from Everett. Its spokesman added that $40,800 should be subtracted from the totals disclosed by Phinney's investigation as the excess expenditure and the engineer's fee. This accounts for preliminary work done by state forces which the consultants accepted.

No complaint had been made this week with regard to the conduct of Parsons, Brinckerhoff, Hall and McDonald.

Three share Turnpike job

Three engineering forms are designing portions of the western extension of the Pennsylvania Turnpike, the Turnpike Commission informed ENGINEERING NEWS-RECORD recently.

They are Michael Baker Jr., Inc., Rochester, Pa., Capitol Engineering Corp., Dillsburg, Pa., and Gannett Fleming Corddry and Carpenter, Inc., Harrisburg, Pa. Each is doing work on detail design for 22 mi. of the 66-mi. extension. Before the contracts were let, Gannett Fleming Corddry and Carpenter "worked on the layout of the entire 66 mi. of the western extension along with the Turnpike engineers," the commission said.



MEXICO'S TALLEST BUILDING—A dozen or more stories higher than its nearest competitor, the new 40-story La Latino-American Life Insurance Building will, when completed, dominate Mexico City's skyline much as the Empire State Building does that of New York. At present, foundations are nearing completion under a contract held by an affiliate of Western Foundation Corp., New York. Based on test of 100-ft. concrete piles of the company's patented button-bottom type that carried 100 ton loads satisfactorily, the engineers are confident that this building will not suffer the settlement damage that characterizes many other heavy structures in Mexico City. Adolfo Zeevaert is chief engineer and foundation consultant on the project and Pedro Albin, Jr. is chief engineer of Western Foundation de Mexico, S. A.

SOME 1200 COMPOSITE PILES support this section of Portland's Harbor Parkway being built by the Oregon State Highway Department. Work now underway will provide 3-level traffic interchange between the freeway skirting the city's main business section and one of the bridges crossing the Willamette River. Piles, driven by the Portland branch of Raymond Concrete Pile Co., consist of 50-ft. untreated wood piles capped by as much as 22 ft. of cast-in-place concrete piles. General contractor is Kuckenberg Construction Co. Project is under supervision of G. S. Paxson, state bridge engineer.

Heads-or-tails odds beat mediation

Have you ever wondered whether the mediator was fair who intervened in your labor dispute?

Well, your chances of getting one who's impartial aren't good—only one in eight—according to the findings of a survey just made by the University of California's Institute of Industrial Relations.

Your chances of getting a pro-management mediator? They're about the same. Not so, though, for your chances of getting one who's likely to favor the union. You'll encounter pro-labor mediation in six cases out of eight, according to the survey.

Sixty-four mediators answered questionnaires. There were 45 questions —11 of them "loaded" in such fashion as to induce the mediator to disclose any partiality. Mediators were asked to pick either of two answers, both of which were wrong—or perhaps no factual answer existed. The Institute figured it could catalogue a mediator's bias by his answers to these questions.

The survey found 46 of the 64 respondents to be pro-labor. Ten wound up on management's side. Only eight were rated neutral.

In another part of the study, all mediators who answered had been rated as "good," "poor" or "other." The eight neutral mediators included seven of the 21 who were classified "good." Conversely, only one of the 24 "poor" mediators was neutral. Yet 13 of the "good" mediators were rated pro-labor. Only one of them was pro-management.

Here is a table of how the mediators stacked up on the impartiality test:

	Pro-Management	Neutral	Pro-Labor	Total
Good mediators	1	7	13	21
Poor mediators	4	1	19	24
Other mediators	5	0	14	19
	—	—	—	—
	10	8	46	64

Some of the "loaded" questions:

During April of 1948, the coal and meat strikes increased the number of work days lost through voluntary stoppage to: (a) 10-million work days (b) 6-million work days. (Correct answer: 8-million)

During the strike wave of April 1948, the percent of estimated working time lost was: (a) 1.1% (b) 2.2%. (Correct answer: 1.1%)

The 1948 increase in the prices of steel were: (a) proportional to the union's wage gains (b) comparatively greater than the union's wage gain.

After one year of operation, the Taft-Hartley Act has resulted in a trend (a) toward successful management defense of its rights and prerogatives (b) toward weakening the security of even the largest unions.

A recent research study of the housing industry has blamed the present crisis in that industry mainly on (a) material shortages (b) excessive labor cost.

The charges of Communist domination of certain large labor unions, made in 1948 by the Congressional Committee on Un-American Activities, have in general been found to be: (a) well founded (b) greatly exaggerated.

A recent personality study of union organizers has found them to be: (a) less educated than the "average American" (b) better educated.

BIDS AND BIDDERS

(Major project news received after Construction Reports, page 47, went to press.)

Hunts Point Sewage Treatment Works—Department of Public Works, City of New York, will open bids Sept. 27 for construction of first section of Hunts Point Sewage Treatment plant, Bronx Borough. Section One includes structures and equipment, pumping units, engines, generators and blowers. The Board of Estimate has approved $19,230,000 for the plant. This is part of $94,830,000 program to free waters around New York of pollution.

Power Generating Station—North West Electric Power Cooperative, Inc., Savannah, Mo., plans power generating station, several sub-stations, equipment and power transmission lines to supply power in northwestern Missouri and southwestern Iowa. Estimated cost is $23,000,000. The owner will apply to REA for $1,000,000 loan for initial work.

Crude Oil Pipline—Humble Pipe Line Co., Houston, Tex., plans 375-mi., 18-in., welded-joint crude oil pipe line from Kemper to Satsuma, Tex. Overall cost is $18,000,000. Bids will be taken before Nov. 30.

Hospital—A $23,000,000 Washington Hospital Center will be constructed in Washington, D. C., by the Public Buildings Administration, Washington, D. C. Gilbert S. Underwood, architect for owner, is preparing plans, which will include a 7-story main hospital.

Catalytic Cracking Plant—Bechtel Corp. of California, San Francisco, has been awarded contract to build catalytic cracking plant, at Salt Lake City, Utah, for the Salt Lake Refining Co., North Salt Lake City. This is part of $10,000,000 program. The engineering staff of Standard Oil of California, San Francisco, Calif., is preparing plans.

Apartment—Eleven Riverside Drive, c/o Sylvan Bien, architect, New York, N. Y., plans 16-story apartment, Riverside Dr. and West 73rd St., New York, to cost about $8,000,000.

Housing—Department of Navy plans constructing 200 rental housing units at Naval Air Station, Orange, Tex., at $1,400,000 and 850 units at Naval Air Station, Corpus Christi, at $5,950,000.

Atomic Laboratory Buildings—U. S. Atomic Energy Commission, Schenectady, N. Y., will open bids Sept. 20 for Administration and Security Building, fire station, maintenance shop, carpenter and machine shop, warehouse, roads, steam distribution system, electrical system, sewage collection and water distribution systems, including water tank, at Knolls Atomic Laboratory, West Milton, near Schenectady, N. Y.

Duchesne Diversion Dam—Grafe-Callahan Construction Co., Los Angeles, Calif., was low bidder when the Bureau of Reclamation, Dept. of Interior, Denver, Colo., opened bids for Duchesne Diversion Dam and sluiceways, Duchesne tunnel and tunnel intake near Heber, Utah. The bid on Schedule 3 was $1,580,784; Schedule 4, $1,505,200; Schedule 5, $4,379,961. No bids were received on Schedules 1 and 2.

High School—Board of Education, City of Knoxville, awarded contract to build the Fulton High School to Foster & Creighton Co., Nashville, Tenn., at $1,580,300. Barber & McMurry, Knoxville, are architects.

Sea Bright-Rumson Bridge—Bids will be opened by New Jersey State Highway Department, Trenton, Sept. 15, for construction of Sea Bright-Rumson Bridge over south branch Shrewsbury River. Former bids were rejected on a low bid of $1,472,124.

Housing—Department of the Army, Washington, D. C., plans 1,000 rental housing units at Red River Arsenal, Texarkana, Tex., to cost about $7,000,000.

High School—Charles A. Maguire & Associates, Providence, R. I., have sketches under way for a high school to cost about $3,000,000 for Town of East Providence, R. I.

Duck Creek Flood Control—City of Davenport, Ia., plans Duck Creek flood control project. Estimated cost is $1,800,500. R. C. Graham, Superintendent of Construction for the city, is in charge of the work.

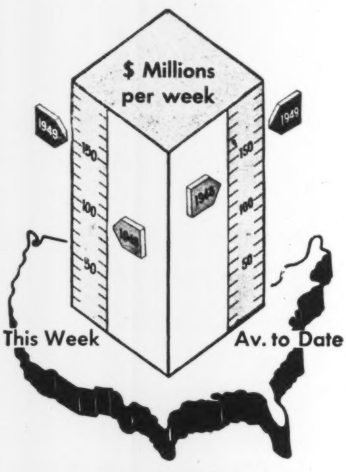
Civic Center—City of Corpus Christi, Tex., plans Civic Center to house municipal government to cost about $2,250,000.

Dwellings—Phoenix Construction Co., Los Angeles, Calif., will build 236 dwellings at Whittier, Calif., to cost $1,652,000. Glenn Lundberg is architect for owner.

COSTS AND VOLUME

ENR INDEX NUMBERS

Index Base = 100		1913	1926
Construction Cost	Aug. '49	478.28	229.91
Building Cost	Aug. '49	350.72	189.59
Volume	July '49	280	123



Activity This Week

As reported to ENR
(in millions of dollars)

Amount of Contracts let

	Week of Aug. 25 1949	Cumulative 1949 (34 wks.)	Cumulative 1948 (35 wks.)	Cumulative % chge av.wk.
Federal	$19.9	$735.1	$679.6	+11
State & Mun.	48.0	2,120.3	1,716.4	+27
Total Public	$67.9	$2,855.4	$2,396.0	+23
Total Private	79.8	2,505.4	2,214.9	+16
U. S. Total	**$147.7**	**$5,360.8**	**$4,610.9**	**+20**

Contracts by type of work

	This Week	Cumulative 1949 (34 wks.)	Cumulative 1948 (35 wks.)	Cumulative % chge av.wk.
Waterworks	$1.4	$147.3	$131.6	+15
Sewerage	5.7	174.0	153.4	+17
Bridges	5.8	213.6	197.9	+11
Highways	12.9	620.4	699.4	—9
Earthwork, Waterways	3.5	383.0	350.9	+12
Buildings,				
Public	23.3	1,095.8	714.5	+58
Industrial	18.2	699.9	650.0	+11
Commercial	38.5	1,507.1	1,266.3	+22
Unclassified	38.4	519.7	446.9	+20

NOTE: Minimum size projects included are: Waterworks and waterway projects, $28,000; other public works, $50,000; industrial buildings, $68,000; other buildings, $250,000.

New capital for construction

	Cumulative 1949 (34 wks.)	Cumulative 1948 (35 wks.)	Cumulative % chge av.wk.
NON-FEDERAL	$3,605.0	$3,300.4	+12
Corporate Securities	1,647.1	1,515.1	+12
State and Municipal	1,958.9	1,293.0	+56
U. N. Building Loan	....	65.0	....
Federal-Aid Highway	*	427.3	....
FEDERAL	*	1,558.9	....
Total Capital	**$3,605.0**	**$4,859.3**	**—24**

*No Federal approp. to-date in 1949.

Construction Wages Up 4 Percent In Fourth-Round Increases

Construction wages have been increased nearly 10 cents an hour for skilled workers, and close to 6 cents hourly for common construction labor in new "fourth round" contract negotiations this year, according to a late tabulation of reports to ENGINEERING NEWS-RECORD from 20 major U. S. cities.

For the skilled trades, (an average of carpenters, bricklayers and structural iron workers rates) the 1949 increase has been 4 percent compared with the 1948 boost of 7.8 percent during the same eight months. Common construction laborers (building and heavy construction averaged) have received increases averaging 4 percent above January rates compared with 9.6 percent a year ago.

Electrical workers have gotten raises in 13 out of the 20 reporting cities this year, bricklayers, hoisting engineers, plasterers and common building laborers in 12 of the cities, and carpenters and heavy construction laborers in 11. Steamfitters have been increased in seven cities, and structural iron workers in nine.

New York, as in the past, has the highest wage scale among the 20 cities, but with the fourth round, Philadelphia is not far behind. Out of seven trades and two classes of unskilled labor, distribution of top positions is as follows: New York, highest or sharing highest pay scale for all seven skilled trades; Philadelphia, splitting top position with New York or second highest in five of the seven skilled trades. Cleveland is a near high for carpenters, and top for building laborers; Baltimore is next to the highest for hoisting engineers and structural iron workers; and Seattle is a near top for bricklayers and highest for common heavy construction labor in the ENR talley.

By trades, the bricklayers received their biggest increase, 75 cents, in Denver, where the rate now is $3.00 an hour. Carpenters were upped most in Cleveland, 20 cents, to $2.52½ including 5 cents for tool replacement, and electrical workers in Philadelphia, with a 62½ cent boost, rise from $2.37½ to a range of from $2.75 to $3.00.

Hoisting engineers in Cleveland have gotten two raises in the fourth round, putting their 1949 increase at 27½ cents. The new wage rate is $2.52½ an hour. Steamfitters have realized their biggest increase in Philadelphia, where a 25-cent boost put their wage scale at $2.75, with 20-cities high for that trade.

Plasterers in San Francisco topped their trade with a 56¼ cent increase to $2.81¼, while Baltimore and New Orleans structural iron workers share top honors with a 25-cent wage boost, to $2.65 and $2.25 respectively.

Common building laborers got a 12½ cent increase in Philadelphia, Cleveland and New Orleans in the fourth round, and heavy construction laborers were upped a peak 42½ cents in two separate increases at Philadelphia.

Public work booming

An expanded program of public construction is primarily responsible for sustaining 1949 new construction activity at record levels. Private construction with a value of $6.2 billion put in place during the first six months of this year was 5 percent less than last year's first-half total. On the other hand, public construction expenditures of nearly $2.3 Billion were 37 percent larger than those of the corresponding period last year, according to a report just released by the Department of Commerce.

Midyear construction review finds commerce optimistic

Construction is surging forward to what probably will be a record level by the end of the year, the Department of Commerce points out in its recent August 10 midyear review on construction and materials outlook for 1949.

New construction with a value of nearly $8.5 billion was put in place during the first half of 1949, establishing a new record for construction activity in dollar terms, 4 percent above last year's previous high of $8.2 billion. At mid-year, an evaluation of prospects for the balance of 1949 indicated that the normal seasonal increase in most types of construction during the third quarter, including the recent upsurge in new home-building, would probably produce a record total of $19 billion for new construction in 1949. This is one percent higher than the revised 1948 total of $18,775,000,000 for all types of construction work.

Commerce's Construction Division points out that the physical volume of new construction this year is expected to show a somewhat larger increase over 1948 as a result of reduced construction costs, but physical volume in 1949 will still be below the high levels of the 1920's and the wartime peak in 1942.

Materials output down

During the first half of 1949, there was no widespread shortage of construction materials which had been hampering the building industry since the end of the war. The overall level of construction materials output for this period however is believed to fall substantially below the level of the corresponding first six months of 1948 Although reports for June are not yet complete, through May of this year, Commerce's Index of Production of Selected Construction Materials averaged 123.7 monthly, 9 percent below the January-May 1948 monthly average of 136.5.

Leading in the decline in 1949 production, as compared with 1948 output, were lumber and a number of plumbing and heating items. During the first 5 months of 1948 lumber production totaled 14,365 Mb. ft.; for the same period in 1949, the figure dropped to 12,317 Mb. ft. A decline of 14 percent.

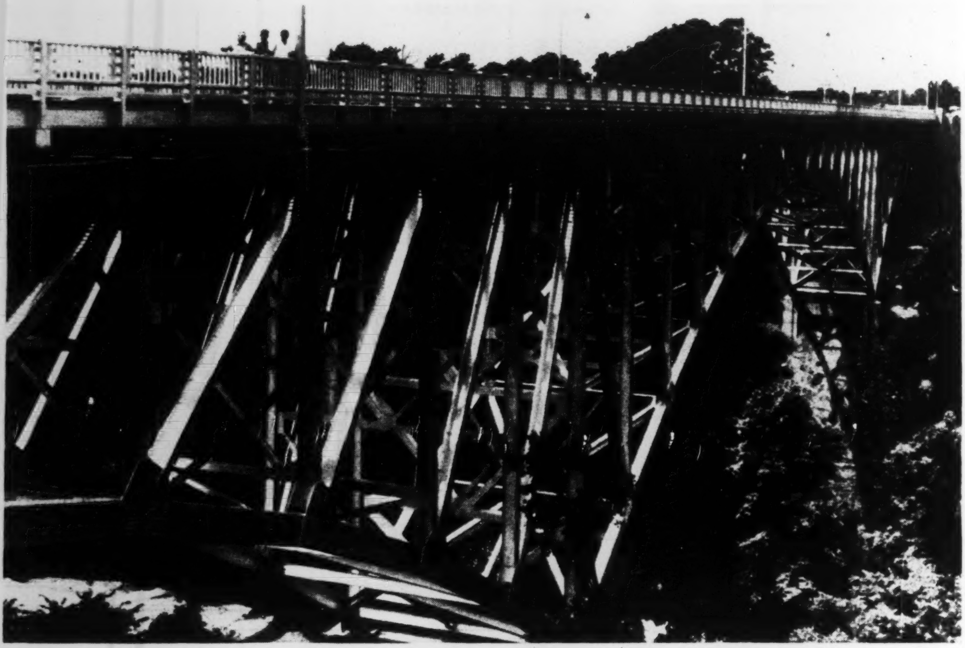
Building vs. factory wage rate increases

Hourly wage rates for union building trades increased 61 percent from June 1940 to July, 1948. In the nearest comparable period, January, 1941 to July, 1948, all manufacturing urban wage rates increased 90 percent as reported by the Bureau of Labor Statistics in its annual report just released on Wages and Hours in the Building Trades, July 1, 1948.

Union wages paid hourly on private building construction went up 99 percent in the same period compared with an increase of 101 percent for gross hourly earnings in all manufacturing.

Average weekly earnings, however, increased 123 percent for union building trades and 113 percent for the factory workers, while during the same period consumer prices went up only 73 percent.

The current trend is for building trades wages to rise more, proportionately, in the lower skills, according to the BLS report on Union Wages and Hours, July 1, 1948.



Beauty, economy and simplicity of fabrication were designed into . . .

Akron's High-Level Cantilever Bridge

John B. Scalzi
Assistant Professor of Structural Design
Case Institute of Technology,
Cleveland, Ohio

THROUGHOUT THE DESIGN of the new $2,000,000 high-level bridge at Akron, Ohio, prime importance was placed upon economy of materials, fabrication and erection.

Opened to traffic in July, the new bridge crosses the Cuyahoga River 220 ft. above streambed, just east of an old seven-span arch bridge erected in 1913. Total length is 900 ft., made up of two 210-ft. anchor spans, two 180-ft. cantilever spans, with a 120-ft. suspended span. Trusses are spaced 40 ft. c. to c., with top chords horizontal and bottom chords on a parabolic curve. They carry two 26-ft. roadway lanes separated by a 4-ft. median strip, and two 6-ft. sidewalks. Panel lengths are constant at 30 ft.

The bridge is of deck-type, designed for the S-20-40 lane loading of the Ohio Department of Highways' specifications. Structural steel, required to meet ASTM A7-42 specifications, was designed for a tensile strength of 18,000 psi.

The 210-ft. anchor arms required anchorage at the abutments by prestressed bars attached to a grillage system embedded in the concrete. In addition to the usual downward reaction, each truss reaction at the abutments is subjected to a net uplift of 500,000 lb. This occurs under full live load on the cantilever and suspended spans, with no live load on the anchor arms.

To fulfill specifications, the abutments are held down by a minimum weight of 1½ times the uplift, in weight of concrete above the grillage systems. The four grillages are each made up of six 12" WF 133-lb., and four 12" WF 100-lb. beams spread over an area of 16x17 ft. Each truss is connected to its grillage system by a 7-in. pin through two links, each with a cross-section of 2x8 in. In order to prevent excessive vertical movement and to furnish a direct transfer of load from the links to the pin a close tolerance of 0.020-in. was specified between the diameter of the pin and the hole in the links. Monel bushings were inserted in the links to reduce wear.

The links holding the trusses to the abutment are prestressed to the uplift load, and an adjustment by movable wedges holds the bars fixed in position. Access to the links attached to the grillage system is by a vertical passageway in the abutment to make for easy maintenance and painting.

Bottom chords pinned at piers

Pin connections in the bottom chords at each pier were designed to reduce secondary stresses and to facilitate erection. These pier hinge supports are the fixed reactions, and their design and construction were of some concern. Two alternate methods were considered. One involved a central pin pivoting on the pier shoe with all members riveted to a large gusset plate.

The other method—which was adopted—utilizes a fixed shoe with the two lower chords pinned to the shoe and the vertical post riveted to a gusset plate which is attached to the shoe. Calculation to determine the secondary effects on the end connections of the members indicated clearly the benefits of the pinned chords.

One load condition was used for the study: for example, the dead load plus the live load that produced the greatest stress in the lower chords. It was found necessary to use 10-in. pins at the end connections of the lower chords to the pier shoe. From an erection point of view it was considered more desirable to anchor the shoe completely and to rivet the 85-ft. vertical post to the gusset plate than to support all three members while inserting the large pin.

The piers were designed as two vertical sections tied together at the top with a hollow box section to form a rigid frame. The vertical members have a cross-section shaped like an I-beam for economy of material.

The roadway is 5-in. open I-beam steel grid, welded to the stringers which are spaced 4 ft. 0 in. c. to c. This type of flooring was selected because of its high strength-weight ratio, simple replacement, and easier winter maintenance. Since the grid is placed in convenient section lengths, a ¼-in. expansion joint is allowed between sections to account for temperature effects.

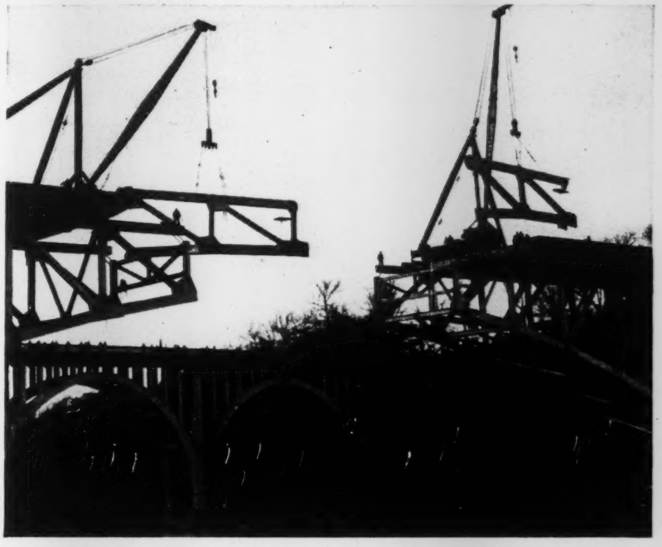
Sidewalks are 2-in. steel grid welded to the stringers and filled with lightweight concrete to form a composite slab. They drain toward the roadway on a slope of 3/16-in. per foot.

Truss member details

Top and bottom truss-chords are designed as box sections with four corner angles, cover plates and web plates. The maximum size angles are 6x6x1-in., while the thickness of webs and cover plates never exceeds 1-in. The chords are constant depth. Top-chord depth is 2 ft. 8 in. out-to-out of cover plates, and depth of bottom chord is 3 ft. 2 in. out-to-out. Access holes are provided in the bottom cover plates at 4-ft. intervals.

Diagonals and verticals are of the built-up I-beam type, except the vertical post at the piers and the two adjacent verticals, which are box-sections. These sections were designed for economy, with minimum gage angles and plates.

The top and bottom lateral systems were designed for the usual wind load, treated as a moving load of 30 lb. per sq. ft. on a 1½ times the exposed area. The sliding support for lateral bracing is at the same end of the suspended span as the expansion support for the main trusses. A similar support is located at the abutment ends at the center of the lower lateral member. The attachment at the piers is considered to be of the hinge type and is ridigly attached. The K-truss type vertical members in the wind-bracing system are designed to transfer the wind loads to the lower lateral system. The wind effect was not of sufficient magnitude to govern the design of the main truss members.

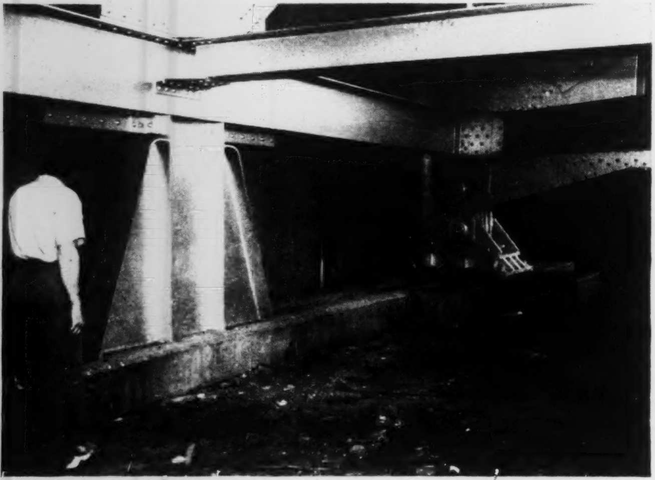


TRAVELLERS SWING 60-ft., 40,000-lb. sections of the suspended span into position (at top), for closure at the center of the middle span. Small gusset plates add beauty to the bridge by accentuating the constant-depth chords. (Akron Beacon-Journal photos)

OPEN STEEL-GRID FLOORING for the two 26-ft. roadways—separated by a 4-ft. welded steel-plate—was adopted for its high strength-weight ratio, excellent drainage and low maintenance in the winter.

The size of the structure may be realized from the quantities involved. They include 5,500,000 lb. of structural steel, 325,000 lb. of reinforcing steel, and 5,000 cu.yd. of concrete. Oddly enough the new structure uses the same quantities of concrete and reinforcing steel that were required in the original bridge.

In order to fabricate the trusses as



WIND STRESSES in the anchor spans are transmitted from the bottom chord lateral system to the abutments through a sliding support embedded in the center of the bridge seat. Truss anchorages, designed to permit expansion at both abutments are prestressed for a 500,000-lb. uplift.

easily as possible, a constant distance of 25½-in. was maintained between the gusset plates. This is also the out-to-out distance of the webs of the chords. The thicknesses of the gusset plates were made ½ in. and ¾ in. depending upon the magnitudes of the loads at the respective connections. To realize economies of material, additional plates were attached to the heavily loaded diagonals and verticals which makes the connecting rivets critical in double shear thereby reducing the size of the gusset plate.

The small gusset plates also add to the beauty of the structure by being less noticeable, thereby accentuating the main members. Filler plates were necessary when the additional connections plates were used. Since some of the gusset plates were necessarily large, it was advisable to stiffen the free edges against lateral instability and buckling by adding reinforcing angles when the unsupported length exceeded 60 times the thickness.

The possibility of a future city park in the ravine made it desirable to consider the architectural treatment of the bridge and the abutments. The abutments were styled for apparent massive strength and durability together with beauty of proportions. To complete the picture of straight-line functionalism, channel railings with turned-down ends were specifically designed for the abutments.

Trusses were fabricated with horizontal top chords plus a permanent camber for 100 percent dead load and 25 percent uniform live load. Bottom chords—on a parabolic curve—closely follow the natural slopes of the gorge. Top chords were made narrower than the bottom chords to simulate a sense of strength and sturdiness in the lower chord. Diagonals and verticals were designed with increasing widths towards the piers.

Pier locations on each side of the ravine were selected on the basis of pleasing proportions of anchor spans to center span.

The abutment support links were prestressed by four jacks acting on a system of beams attached to the upper pin. A tension stress of 500,000 lb. was exerted by the jacks and the adjustable block was locked in position. The anchor span was then constructed with jacks acting as intermediate supports at the 60-ft. panel points from the end reaction.

The center suspended span was erected by lifting two 60-ft. sections each weighing 40,000 lb. and holding them in position while workmen inserted the necessary drift pins and erection bolts.

Old bridge was inadequate

There was little question that the 45-year old bridge needed replacement. It was on a poor alignment for high-speed traffic and its 26-ft. roadway, with two 4-ft. sidewalks were inadequate for the volume of traffic. But the inadequate strength of the old bridge and its progressive exterior deterioration were more serious. It had been posted for a 10-m.p.h. speed limit for several years.

The old bridge contains five full-centered 127-ft. span reinforced concrete arches and two 73-ft. end spans. Arch ribs are spaced 20 ft. c. to c. Design loads included a 40-ton interurban car with 40 percent impact, an 18-ton truck with 30 percent impact, a uniform live load of 100 lb. per sq. ft. on the roadway and 75 lb. per sq. ft. on the sidewalks. The wind force was 30 lb. per sq. ft. of the projected area. Design stresses in the old bridge were 750 psi. for concrete and 16,000 psi. for reinforcing steel.

Repair needed

The deterioration of the thin sections of the concrete structure has progressed to the point where portions have necessitated intermittent replacement. This condition may be attributed to the salt type of winter maintenance which is harmful to concrete, and to the increased loads and speeds of present day vehicles, resulting in greater vibration and impact effects than were considered originally.

The new bridge was built as a regular federal aid project with five agencies cooperating. Total contract cost was $1,933,600 and the costs of damages and right-of-way were $185,000.

The Public Roads Administration contributed 50-percent of the cost; the Ohio Department of Highways, 25-percent; and Summit County 25-percent. Of the 25 percent allotted to Summit County, the cities of Akron and Cuyahoga Falls contributed right-of-way and relocated various public utilities. Surveys and design plans were furnished by Summit County and construction engineering by the Ohio Department of Highways.

Design plans were prepared by Wilbur Watson Associates, consulting engineers, Cleveland, Ohio, under the supervision of T. E. Terry, partner, and S. O. Forsmark, chief engineer. The author was employed as a designer for Wilbur Watson Associates during summer vacations.

Bates and Rogers Construction Corp. was the general contractor. C. T. Smith was general superintendent and M. C. Warmbier, general foreman. Structural steel was fabricated and erected by the Bethlehem Steel Co., under a subcontract. Harry Hiscott was superintendent of erection.

Summit County was represented by A. F. Ranney, county engineer; and Ralph VanBrimmer, bridge engineer. For the Ohio Department of Highways, C. M. Newhall was project engineer and William Wardman, division construction engineer.

PHILADELPHIA FACTORY with new-type roof drainage system sheds rain into sewers at a slower-than-conventional rate.

Flat-Roof Drainage Design Saves Money

Bradford G. Storey and Joseph Wells
Head and Assistant Head, respectively, Sanitary Engineering Division
The Ballinger Co., Philadelphia, Pa.

The drainage system for the flat roof of the Yale & Towne Mfg. Co. plant in Philadelphia, Pa., was designed to handle the actual runoff of storm water, as indicated by computations. This resulted in a saving of more than $100,000 over the estimated cost of a conventional system.

Most plumbing codes specify the size of pipe to be installed to drain a given roof area. The Philadelphia code, for example, requires a 6-in. conductor for 6,000 sq.ft., an 8-in. for 13,000 sq.ft. and a 10-in. for 25,000 sq. ft. These sizes are based on experience with sloped surfaces, which permit rapid runoff into the inlets.

On flat surfaces, however, water will not flow until a head is built up. Accordingly, rainwater must accumulate on a flat roof until it develops sufficient head to discharge over the gravel stop of the inlets, which function as circular weirs. Thus, the rate of discharge is much less than from a pitched roof, and smaller conductors and sewers can be used.

Advantages over usual design

This was taken into account in designing the drainage system for the Yale & Towne flat roof, which totals 800,000 sq.ft., provision being made for future expansion of an additional 1,200,000 sq.ft. The design is believed to have been the first to use computed maximum runoff from a flat roof. Since then, similar systems have been designed by The Ballinger Co. and installed in plants in Pittsburgh, Pa., and Elizabeth, N. J., and one is under construction in Youngstown, Ohio. These installations not only saved the owners money, but they reduced the load on the municipal sewer systems.

For the Philadelphia plant, the conventional method of design would have required draining rainwater to both the north and south sides of the building and would have necessitated use of eight 18-in. dia. cast-iron pipes in both directions. Also, it would have required 60-in. dia. intercepting sewers on both the north and south sides.

With the new design, cast iron soil pipe is used exclusively inside the building lines, with the maximum size limited to 15-in. dia. Only four main drain lines are required in the building. All go to the south side where they are collected in a 48-in. intercepting sewer, capable of draining 2,000,000 sq. ft. of flat roof and six acres of paving.

The roof was designed for a snow load of 30 psf., which is equivalent to a 6-in. depth of water. This live load is more than ample to account for any impounding that might occur on the roof during a storm, since a depth of 2 in. is the greatest anticipated. While clogged rainwater inlets might cause trouble on a sloped roof, they cannot damage a flat roof, because there can be no concentration of weight, and flooding above the flashings is impossible.

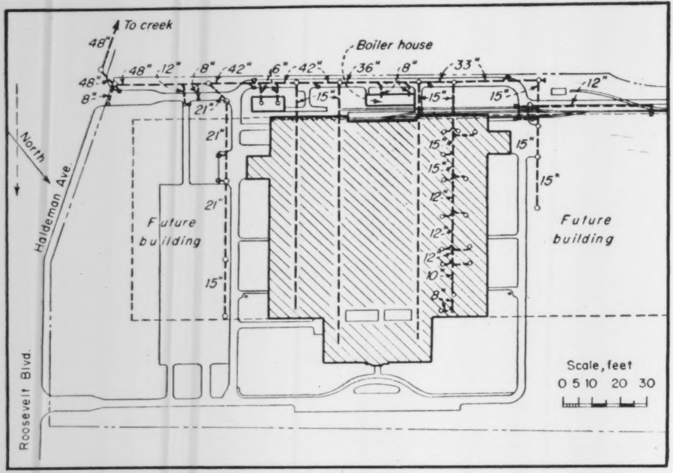
Pipe sizes were selected to handle the runoff from a 10-yr. storm as given by

$$I = 166/(t + 16)$$

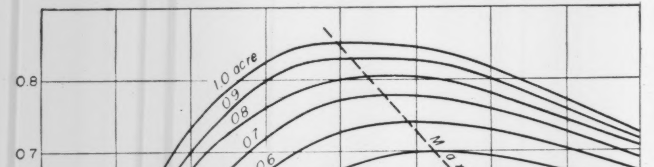
where I is the intensity of rainfall in inches per hour and t the time of concentration of the storm in minutes. This last is the time it takes water to flow from the most distant point on the roof to the roof inlet and through the piping system to the point under consideration in design.

For a pitched roof, concentration time is usually 5 to 10 min., which requires the use in design of an intensity varying from 7.9 to 6.4 in. per hr. Sizes of stormwater piping required by most codes are based on these conditions.

For a flat roof, however, larger values



PLOT PLAN of Philadelphia plant showing roof drainage system. Surface drainage from the north side of the building is not indicated. About 800,000 sq. ft. of flat roof must be drained by the system, and provision made for addition of another 1,200,000 sq. ft. of roof area to be drained when future structures are built, as indicated on plan.



DISCHARGE of rain water from flat-roof areas over a 3.81-ft. weir is given by these curves for various storm intensities.

must be allowed for time of concentration—the period during which a sufficient head of water is built up to develop maximum discharge into roof inlets. Intensities, as given by the equation, are much less, therefore, for a flat roof.

Intensity-discharge curves

When the rates of rainfall thus obtained are applied to the discharge over a standard straight weir, the curves shown in the accompanying diagram result.

Computations for the curves were based on a roof drain with a gravel stop, which functions as a circular weir, with a circumference of 3.81 ft. For this inlet, the discharge equals the rate of rainfall for an intensity of 0.9 in. per hr. on a roof area of 0.6 acres. It will be raining then at the rate of 0.54 cfs. on this area, and this rainfall will last 168.5 min. (according to the intensity curve for Philadelphia's 10-yr. storm). Precipitation on this 0.6-acre area will total 168.5 × 60 × 0.54, or 5,459 cu. ft.

At the instant that rainfall equals discharge into the roof inlet, half the rainwater that has fallen will have discharged into the inlet. The depth of water on the roof at this time will be ½ × 5,459 ÷ 0.6 × 43,560, or 0.1044 ft. A weir with a length of 3.81 ft. and a head of 0.1044 ft. will then be discharging 0.1417 × 3.81, or 0.54 cfs. (0.1417 is the discharge in cfs. over a weir one foot long, with a head of 0.1044 ft.) This is the maximum discharge into the inlet from 0.6 acres when discharge equals rainfall. A rainfall of less intensity than 0.9 in. per hr. will discharge less than 0.54 cfs. when discharge equals rainfall. A greater storm will stop or slacken before discharge equals rainfall.

Test calculation

To determine if it is possible to obtain greater discharges into the roof inlets from storms of intensities greater than 0.9 in. per hr. at the time the storm is over or slackens, the following calculation was made: A rainfall of 1.0 in. per hr. will last 150 min. The volume of rainwater will be 1.0 × 0.6 × 150 × 60, or 5,400 cu. ft. Computations established a weir height of 0.1088 ft. at the end of the storm. With this weir height of 0.1088 ft., at the end of the storm the discharge would be 0.568 cfs. The average discharge would be 0.284 cfs. The volume of rainwater discharging into the inlet during 150 min. would be 150 × 60 × 0.568, or 2,556 cu. ft. Water would accumulate on the roof to a depth of (5,400 − 2,556)/(0.6 × 43,560), or 0.1088 ft. A weir height of 0.1088 ft. on a 3.81-ft. length would give a discharge of 0.149 × 3.81, or 0.568 cfs. This discharge develops at the end of the storm, or when the storm slackens. (0.149 is the discharge in cfs. over a weir one foot long with a head of 0.1088 ft.)

Similarly at the end of the storm, or when it slackens, the discharges shown in the accompanying table develop.

Intensity (In. per hr.)	Time (Min.)	Discharge (cfs.)
1.00	150	0.568
2.0	67	0.724
2.1	63	0.730
2.2	59.5	0.734
2.3	56.2	0.735
2.4	53.2	0.7380
2.5	50.4	0.7382
2.6	47.8	0.7380
2.7	45.5	0.737
2.8	43.3	0.736
2.9	41.3	0.734
4.0	25.5	0.670

Maximum discharge into the roof drain from 0.6 acres of flat roof will be from a 2.5-in. per hr. storm lasting 50.4 min. and discharging 0.7382 cfs. at the end of the storm, or when it slackens.

By the above methods, a tabulation was made for even tenths of acres at intensities of even tenths of inches per hour. The accompanying curves were plotted from this tabulation.

Because different size areas have a maximum runoff at different intensities, it is necessary, when combining two or more areas, to tabulate the runoff for each area at a sufficient range of intensities and then add the runoffs at each intensity to determine which gives the maximum. The problem becomes further complicated when flat roof areas are combined with graded areas, but a maximum will develop. When the proportion of graded areas to the total area is high, the range of intensities must be expanded to the limits of the rational method for determining runoff.

Since the inlets actually are circular weirs, which have a smaller discharge rate than straight weirs of comparable size, a good-size factor of safety is provided by basing the calculations on straight weirs. This was verified by tests made on roof drains from 2 to 8 in. in diameter by the Josam Mfg. Co. under the supervision of A. Matheis, chief engineer.

Load on sewers reduced

The curves indicate that much greater roof areas may be safely drained into a given-size rain conductor than is permitted under normal practice. For example, a flat roof, 26,000 sq.ft. in area, will have a maximum discharge of 0.74 cfs. if one 8-in. conductor is provided. In contrast, normal practice would require two 8-in. pipes, each draining 13,000 sq.ft. of roof and each having a maximum discharge of 0.58 cfs., or 1.16 cfs. together. This means that nearly twice as much water would be discharged to the sewer from the same area by a conventional design.

It is apparent that not only is the draining of larger roof areas to a single conductor more economical, but the discharge from the property to the city sewers will be much less. In the case of the design under consideration, the maximum discharge from the roof will be 24cfs. If normal practice was followed, the pipe would have been sized to accommodate a discharge of 92 cfs., not including the discharge from the paved areas outside the building, or roof areas of future building expansions.

Most cities have storm drainage systems designed mathematically with allowances for future load. Once considered conservative, these provisions however, are no longer adequate. Suburban real-estate development, in most cases, has exceeded the greatest expansion contemplated. In addition, there are unanticipated air fields with huge paved runways, factories and warehouses with sloped roofs, and paved parking lots. Wooded areas are constantly being cleared for cultivation. This additional drainage has loaded the existing facilities far beyond the maximum for which they were designed. Use of flat-roof drainage systems on new buildings, therefore, will help reduce the overload.

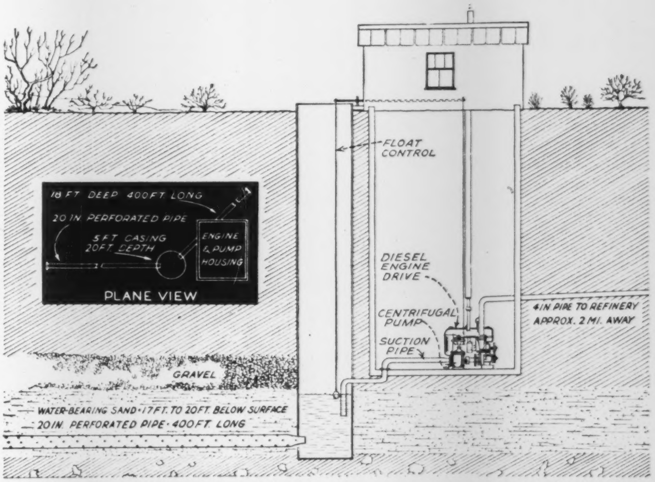
◆

Sand layer 3 ft. thick yields 79,000 gpd.

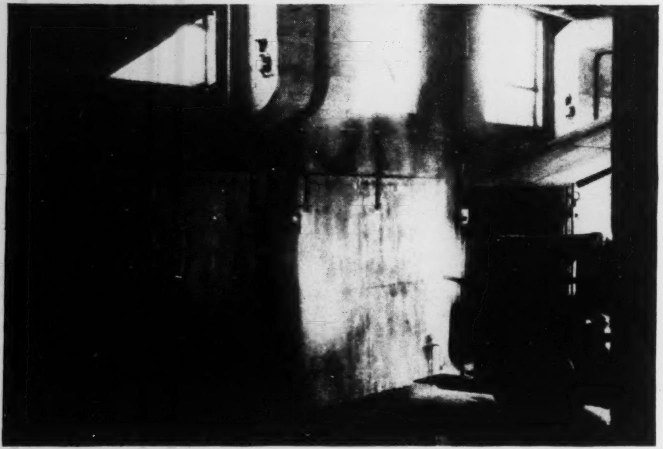
A 3-ft. layer of seeping sand, 18 ft. below the ground level, has yielded 79,000 gallons-a-day of water for the last five years. Located at the Waggoner Refinery, Electra, Texas, this unusual water supply was designed by J. O. Walkup to relieve an emergency water shortage.

Two slotted 400-ft. lengths of 20-in. pipe imbedded horizontally in the water sand made development of this thin layer possible. Quarter-inch slots cut out over the entire pipe surface permit water to flow in from the sand. Before pipes were backfilled, Walkup covered them with scrap sheet metal and then a 2-ft. layer of gravel to prevent clogging of slots.

A shaft adjacent to the collecting well houses a diesel engine and pump. Operating 24 hours a day, the centrifugal pump maintains flow of 50-60 gpm. under pressures ranging from 60-100 lb.


FLOAT CONTROL
18 FT DEEP 400 FT. LONG
20 IN. PERFORATED PIPE
5 FT. CASING 20 FT. DEPTH
ENGINE & PUMP HOUSING
PLANE VIEW
DIESEL ENGINE DRIVE
CENTRIFUGAL PUMP
SUCTION PIPE
4 IN PIPE TO REFINERY APPROX. 2 MI. AWAY
GRAVEL
WATER-BEARING SAND · 17 FT. TO 20 FT. BELOW SURFACE
20 IN. PERFORATED PIPE · 400 FT. LONG

HORIZONTAL, PERFORATED PIPE embedded in thin water-bearing stratum collects 79,000 gpd. Float control regulates pumping rate. (International Harvester Co.)



AUTOMATIC CONTROLS. Switches at kiln-door jambs operate damper motors (on hot-air ducts, above) and steam valves in Sioux City plant.

Curing Controls Speed Block-Making

John B. Moxness
Application Engineer
Brown Instrument Division
Philadelphia, Pa.

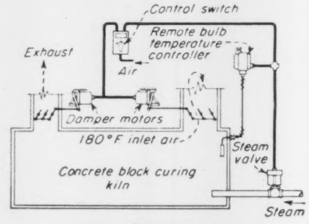
AUTOMATIC CONTROLS are being used by several concrete block makers in the United States to obtain proper curing—a prime essential for efficient block production. Real efficiency is reached when the finished products can be delivered from within 24 to 48 hours after manufacture.

Three basic objectives which are interdependent must be attained to accomplish this. They are:

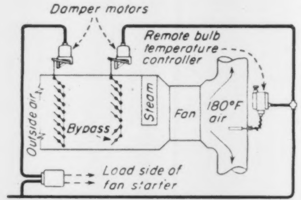
1. Construction of kilns and installation of equipment that will permit completion of the curing and drying cycle from machine to yard within a 24-hr. period.
2. Holding the curing phase to about a 16-hr. period.
3. Holding the drying phase—separate and distinct from the curing phase—to that period of time which will satisfy the conditions of objective (1), as well as remove moisture contained in the units in excess of 40 percent of their total absorption, as required in standard specifications.

The first two hours of the curing phase are used as a waiting (or preheating) period to allow the concrete blocks to set before being exposed to live steam. At end of the waiting period, live steam is turned on and the temperature in the curing room is raised at rate of 40 deg. F. per hour to 180 deg. This takes about three hours. The 180 deg. F. temperature is maintained about ten hours, then the steam is turned off and a one-hour "soaking period" completes curing.

The drying phase consists of passing outside air heated to 180 deg. F. through the kiln at a rate per minute equal to the cubical volume of the kiln. Air is supplied from a central fan heating unit.



KILN CONTROL



HOT AIR CONTROL

CONTROL HOOK-UP. Top diagram shows control layout for each kiln. Bottom diagram shows how the hot-air temperature is regulated for the whole plant.

Such a cycle is attained by Concrete Products Co., Sioux City, Iowa, in the six-kiln plant pictured here. Adjacent to each kiln door, there is a three-position air switch (cure, soak and dry). When the blocks are placed in the kiln, the switch stands at "soak," (or neutral) where it remains for two hours. The switch then is turned to "cure," whereupon air pressure is supplied to a remote-bulb pneumatic temperature controller set at 180 deg. This controller operates a normally-closed steam valve between the supply and the kiln. (When fully open, the valve admits enough steam to increase kiln temperature 40 deg. per hour).

When the curing phase is complete, the switch is turned back to "soak" for the requisite time and then to "dry." This admits air to the damper motor on the hot-air duct (above jamb between kiln doors). This motor, a diaphragm in a cylinder, opens a normally-closed damper in the duct, admitting air at 180 deg. An exhaust damper also is opened by the same means.

Meanwhile, a separate control system maintains duct air at 180 deg. Outside air is pulled by a fan through two dampers and a steam coil, and pushed into the manifold duct that leads to the six kilns. At the duct, a remote-bulb controller regulates the amount of compressed air fed to one motor, which actuates the inner damper (the inner damper is a combination by-pass and steam-coil damper.) A second damper is opened whenever the fan motor is on.

Boiler pressure in the Sioux City plant is 100 psi. Cured blocks normally stand in the yard for two days before they are considered marketable.

Quebec installation

At Sioux City, it was necessary to keep the control costs down to a minimum. A somewhat more elaborate control system was devised for the plant of Valere Cote Ltd., in Quebec City, Quebec.

In that plant each period is timed automatically, by a multiple camtimer that handles all of the plant's seven kilns. In addition, controllers are used for both temperature (180 deg.) and humidity (100 percent during curing) regulation. The cycle in this plant is 16 hours and the storage period is two days.

The Sioux City and Quebec installations were engineered by Brown Instrument Division, Minneapolis-Honeywell Regulator Co., Philadelphia.

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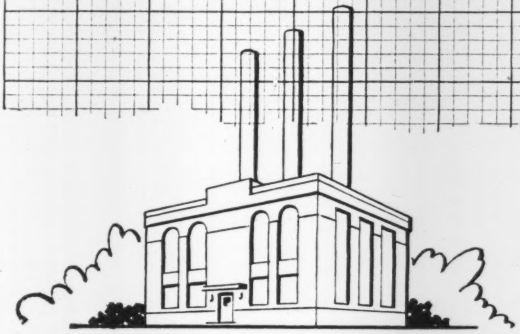

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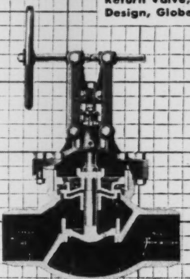
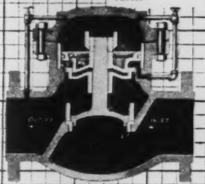
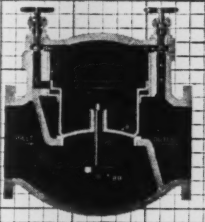
G-A Single Acting Non-Return Valve, Toggle Yoke Design, Globe Pattern.



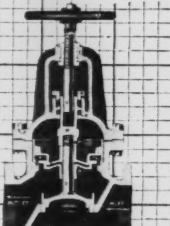
G-A Automatic Hydraulic Check Valve, Globe Pattern.

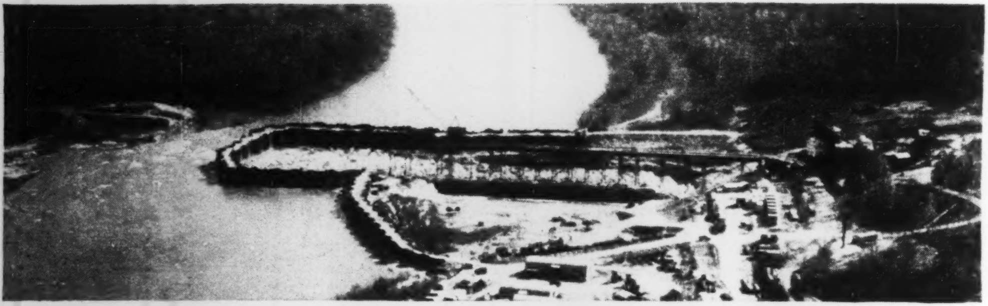


G-A Double Cushioned Check Valve, Globe Pattern.



G-A Combined Throttle and Automatic Engine Stop Valve, Standard Yoke Design.





COOL CONCRETE goes into this power and flood-control dam on the Roanoke River in central southern Virginia.

Icing the Mix at Buggs Island Dam

A FINE EXAMPLE of concrete cooling is found at Buggs Island Dam, being built by the Corps of Engineers near the midpoint of the North Carolina-Virginia line. The cooling process is designed to reduce the stresses caused by the heat of hydration in mass concrete.

As at several other jobs, the engineers have specified a three-point approach to cooling, aimed at keeping concrete below 62 deg. F. at the time of placement. The contractor's plant is set up to deliver both ice and cold water into the mix, and to chill the coarse aggregates before mixing.

Before the job is finished, the cooling plant will have done its part in the production of 700,000 cu.yd. of concrete for this dam—the first step in taming the Roanoke River. (In 1940 the river went on a record rampage, inundating industrial plants at Roanoke Rapids and causing severe farm damage below Weldon, N. C.) Significant facts about the project are given in the table below.

One thing the table doesn't mention is that the foundation, a granite that was sparsely covered by overburden, is one of the best the engineers have had the pleasure of working on.

The quality of the rock in the dam foundation is so high that an outcrop of the same formation, 2.65 miles from the site, has been accepted as the source of all aggregate, from sand to six-inch. After quarrying, crushing and screening, this material is transported to the dam in hopper-bottom cars, belt conveyed up to stockpiles, then fed to the mixer on the dam's left abutment. (See plant layout plan.) During the feeding process at the damsite materials are re-screened. In addition, the coarse aggregates are treated to reduce their temperatures, if the temperature at the time of mixing requires it.

Three steps are necessary to accomplish the mix-refrigeration: (1) water supply and treatment; (2) ice-making and water-cooling; (3) aggregate-chilling and concrete-cooling.

Getting the water

Water supply for the Buggs Island Project is very much like that for a small town, except that the structures are temporary. Raw water is pumped from the Roanoke River, a short distance downstream from the damsite, by two 2,400-gpm. pumps to a 66,000-gal. raw storage tank on top of the left abutment, uphill from the mixing plant. From this tank the water goes through a four-tank zeolite softening process in the treatment house alongside the raw water tank, then is pumped into the treated-water tank, a twin of the raw water tank. (Two small tanks in the treatment house provide activated-carbon treatment for a portion of the water, for domestic use.)

From the treated water tank, the water goes to the refrigeration house (marked "Ref." on the drawing). Most of the water is merely chilled to 35 deg. F., but a small amount is made into flake ice. The building contains four machines: (1) a freon plant for chilling aggregate-cooling

BUGGS ISLAND DAM

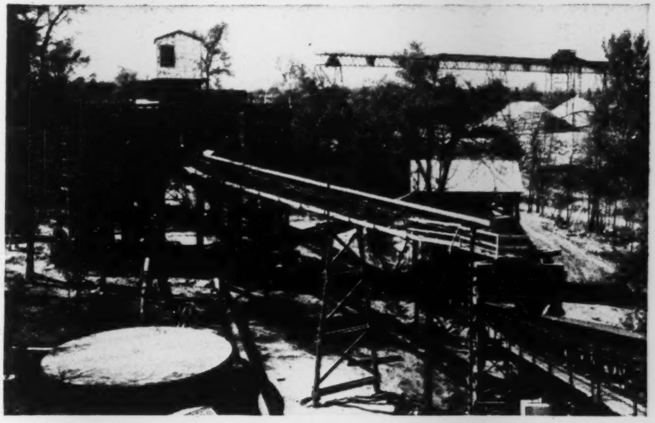
PURPOSES OF PROJECT: Flood and low water control; hydro-electric power	
NATURAL FLOW OF RIVER	
Av. Annual Flow	7,850 cfs.
Max. Flow (1940)	270,000 cfs.
Min. Flow (1932)	467 cfs.
REGULATED FLOW OF RIVER	
Max. (Flow Control)	60,000 cfs.
Average for Power	6,850 cfs.
RESERVOIR	
Storage at El. 320	2,921,000 ac.ft.
Storage at El. 300	1,576,000 ac.ft.
Net Flood Storage	1,345,000 ac.ft.
DAM	
Length	
Concrete portion	2,785 ft.
Earth portion	19,572 ft.
Max. Height	
Concrete portion	144 ft.
Earth portion	45 ft.
Crest Gates (22 Tainer)	
Size, length by height	42x32 ft.
ELEVATIONS (msl.)	
Top of Dam	322 ft.
Crest of Spillway	288 ft.
Max. Floor Pool	320 ft.
Max. Power Pool	300 ft.
POWERHOUSE GENERATORS	
Initial Installation	
3 units at 32,000 kw.	96,000 kw.
1 unit at 12,000 kw.	12,000 kw.
2 units at 1,000 kw.	2,000 kw.
Future Installations	
3 units at 32,000 kw.	96,000 kw.

water; (2) an ammonia-and-brine plant for making ice; (3) a cooler that furnishes chilled water to mixer and flakeice machine; and (4) a condensing unit that maintains the temperature at 22 deg. in the ice-storage bins.

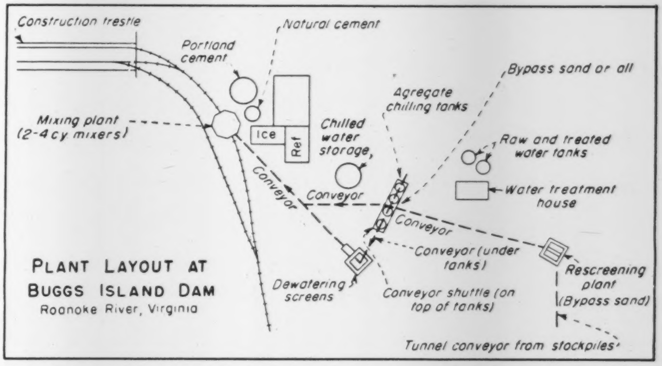
The freon plant consists of a large tank topped by a freon condenser, together with a two-stage centrifugal-pump compressor. The treated water passes into the chilled water storage.

Brine from the ammonia plant is pumped to the top floor of the building marked "Ice," where three 16.35 ton-per-day flake ice machines are located. These machines look like wooden tool boxes. Inside, a flexible stainless steel drum is rotated slowly. Brine at −3 deg. F. is sprayed on the inside of the drum, which rotates in a bath of cool treated water, to form a $\frac{1}{8}$-in. sheet of ice on the outside. The drum's curvature is sharpened near the top, so that the ice sheet separates from the drums and slides over a thin plastic sill at the top of the chute. The chute leads to either of two refrigerated bins that are at the base of the building.

In the bins, power rakes help keep the flake ice particles from fusing, and feed the flakes to a screw conveyor that carries ice to the top of the mixing building.



STONE-COLD is the word for aggregates from the four tanks at left. Photo taken from mixer plant also shows chilled water tank, lower left, and stockpile setup, right background.



PLANT LAYOUT at Buggs Island Dam's left abutment. All sand bypasses the aggregate chilling tank at center.

What the specifications say

With water cooled and ice made, the contractor is ready to make cold concrete. The specification states: "Concrete . . . shall have a temperature of not more than 62 deg. F. and not less than 40 deg. F. with the provision that refrigeration of the mixing water and the use of (flake) ice shall be carried on at all seasons until the concrete temperature, when placed in the forms, decreases to not more than 50 deg. F." The plant also is set up to perform aggregate precooling.

The four "Aggregate Chilling Tanks" (drawing) are located at a junction on the main conveyor route from stockpiles to mixer. All sand is bypassed, but four coarse sizes can be shuttled to their respective insulated chilling tanks. There they are exposed to circulating chilled water, long enough to reduce stone temperature to between 55 and 60 deg. F.; then the water is drained and the aggregates are conveyed (a size at a time) from the tank bases to the dewatering screens.

Drying is accomplished by vibration, and by jets of compressed air aimed at the stone as it falls from the screen to the final conveyor. Aggregates are delivered to their respective insulated compartments in the top of the mixing plant by continuous flow, either from the main stockpile or from the chilling tanks.

The top of the mixing plant includes five aggregate compartments and two cement bins. Beneath each of these compartments and bins is a batch-weighing hopper. In addition, there are weighing hoppers for water, air-entrainment, admixtures, and for flake ice. The flake ice is delivered to its hopper by a screw conveyor and bucket elevator, running in an insulated conduit from the bottom of the ice bins. Mixing water, either chilled or unchilled, is available at the plant.

Batches—their proportions based on temperature and other conditions—may include either ice or cold water, or both (and the presence or absence of cold aggregate is taken into account). Ingredients drop into one of twin 4-yd. mixers, mix 2½ minutes, and from there they go into 4-cu.yd. buckets for rail transportation out onto the dam's trestle. Two gantry cranes swing the buckets to place in the dam.

Concrete placement began in April, 1949, just one year after the present contract was let, and the generators are expected to begin delivering electricity in September, 1952. Previously, part of the cofferdam had been built.

The Norfolk District, U. S. Corps of Engineers, is in charge of the work; Col. George T. Derby is District Engineer and Fred L. Geis, Jr., is resident engineer at Buggs Island. The principal general contractor is Jones-Tompkins-Wright, South Hill, Va.; A. L. Pauls, Project Manager. There are separate contracts for aggregate production, steel penstocks, power plant superstructure and equipment, tainter gates and other items.

DREDGE REMOVES MUCK, which is to be replaced by sand. Caving sideslopes necessitated much over-dredging.

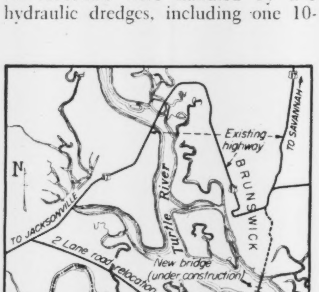
Building Salt-Marsh Roads in Georgia

RELOCATING the coastal highway at Brunswick, Ga.—to save 8 miles of back-tracking—called for some ambitious earthwork where the location crossed salt-marsh areas. Soft muck had to be removed down to hard ground (at places more than 30 ft. below mlw.) and replaced with sand.

The road work is being performed as part of an overall project that also includes Georgia's biggest bridge (ENR, July 7, p. 73). In addition to the main-highway relocation, it includes a two-lane spur to Jekyll Island, now dependant on a ferry.

All of the 6.2-mile Jekyll spur, and almost exactly half of the 6.6-mile main road relocation runs through marsh. The remainder of the main road is on firm ground. On the Jekyll spur, muck was removed to a maximum depth of 26 ft., but not necessarily down to hard ground. On the main road, muck was removed to the underlying sand—a depth that reached a maximum of 36.5 ft. below marsh level. (See accompanying typical cross-section of excavation).

In all, muck, amounting to 2,393,280 cu.yd. and backfill amounting to 5,024,782 cu.yd., was moved on this job. The excavation and backfill materials were handled by five hydraulic dredges, including one 10-in., one 12-in., two 16-in., and one 22-in. machine.

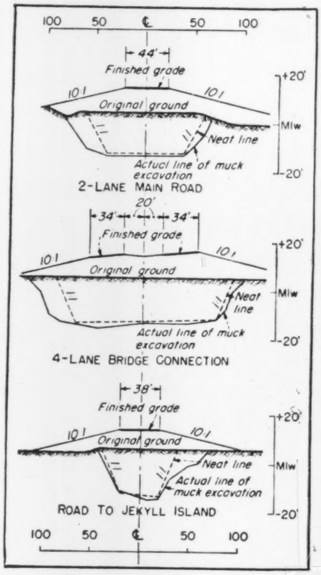


TODAY'S ROAD doubles back on itself at Brunswick. New route will save 8 miles.

Both operating speed and ingenuity were required during excavation and backfilling. Because of a high silt content, the muck was unstable in the excavation. To minimize loss of ground, the contractor operated on three shifts, making 100 to 125 ft. of progress in an 8-hr. shift; it was possible to move about 34,000 cu.yd. in a 24-hr. day.

Sliding causes excess dredging

As the muck, seaweed and marsh grass were dredged, the spoil was pumped to points 600 to 900 ft. from the cut. Although in most places the remaining underwater bank would stand up on a 3 to 1 slope, a great deal of sliding took place, the material tending to slough into the bottom of the excavation. In order to obtain required width at bottom of cut, it was necessary to make large over-cuts to come within contract specifications. In some instances this


100
50
℄
50
100
44'
Finished grade
10/1
10/1
Original ground
Mlw
Neat line
Actual line of muck excavation
+20'
-20'
2-LANE MAIN ROAD
20'
34'
34'
Finished grade
10/1
10/1
Original ground
Mlw
Neat line
Actual line of muck excavation
+20'
-20'
4-LANE BRIDGE CONNECTION
38'
Finished grade
10/1
10/1
Original ground
Mlw
Neat line
Actual line of muck excavation
+20'
-20'
ROAD TO JEKYLL ISLAND
100
50
℄
50
100

TYPICAL SECTIONS, showing designed and actual excavation lines; also final section for hydraulic sand fill.

CUTTER HEAD is about to take another pass at salt-marsh muck. Beyond is an inlet, where tidal currents later may hamper sand-backfill work.

SAND BACKFILL for first lift in four-lane sections. Draglines have built-up dikes, which will retain second lift. Pipes being set up for second lift.

was as much as 80 percent, in which case the final position of the slope was 5 to 1. In some sections, where the overcut amounted to 25 percent, the angle of repose was 4 to 1. On the Jekyll spur, the overcut in the muck excavation was 60 percent, and the slope finally approximated 4 to 1.

The sand material for backfill was placed hydraulically from under-marsh borrow pits in areas adjacent to the location. This material was placed in two lifts, the first being taken from the bottom of the excavated trench to an elevation of plus eleven. After this first lift was in place, the contractor used two ¾-cu.yd. draglines to excavate a broad depression along the center portion of the embankment, casting this material from the shoulder lines outward to an elevation of 18 ft.

Cast material formed dikes between which the center lift of the fill was pumped to an elevation of +16, and then a small bulldozer and a ¾-cu.yd. dragline dressed the embankment to typical section.

At intervals—generally every 1,800 ft.—during placement of the backfill material, it was necessary to re-dredge the cut because more material had settled from the side-slopes.

A typical finished hydraulic section provides a 44-ft. width of roadway with a 10 to 1 side slope. (The side-slope for both cuts and fills in the highland section is 4 to 1, with variable-depth ditches.)

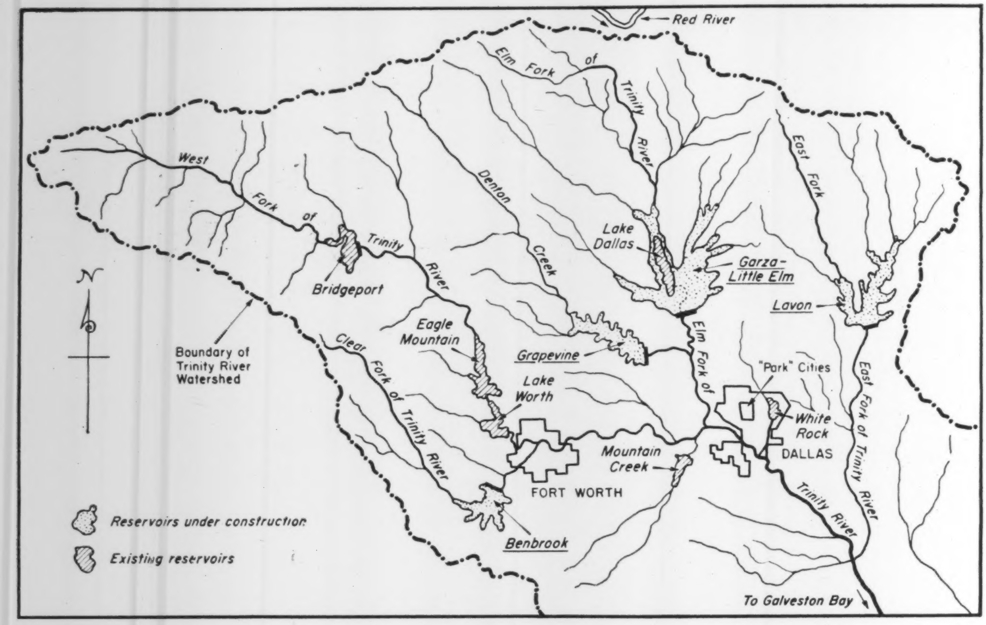
Many unusual situations developed because of the nature of the soil, the numerous tide-creeks and the speed of the tides in some places. At some points it was necessary to close both ends of creeks during backfilling operations, the current being so swift that it would carry material away. Closure was effected with temporary hydraulic fill. The average tide was 7 ft., with maximum high tide of 11 ft. above low water.

Engineers believe that the sand backfill, down to firm soil, will provide a solid base for the main road. On top of the hydraulic fill, the contractor is placing a 3-in. selection of materials to stabilize the roadbed to a minimum bearing capacity of 50 psf. On top of this there is 7 in. of limerock stabilized roadbed rolled to 100 percent compaction, then a single bituminous surface treatment, with liquid seal.

The project was started June 2, 1948, and the excavation and backfill are scheduled for completion by November, 1949, with paving to be completed by September, 1950.

W. L. Cobb Construction Co., Decatur, Ga., and the Hendry Corp., Rattlesnake, Fla., have the joint contract for grading and paving, of which $1,616,940 is on the interstate system and $1,105,472 on the Jekyll spur, a total of $2,722,412.

E. W. Ellis, special bridge engineer is in charge of state forces at the site, and W. C. Smith is resident engineer. M. L. Shadburn is state highway engineer; C. N. Crocker, bridge engineer; J. O. Bacon, district engineer at Savannah.


Red River
Elm Fork of Trinity River
East Fork
West Fork of Trinity River
Denton Creek
Lake Dallas
Garza-Little Elm
Lavon
Bridgeport
Eagle Mountain
Grapevine
Lake Worth
Elm Fork of
"Park" Cities
White Rock
DALLAS
East Fork of Trinity River
Boundary of Trinity River Watershed
N
Clear Fork of Trinity River
Mountain Creek
FORT WORTH
Trinity River
Benbrook
Reservoirs under construction
Existing reservoirs
To Galveston Bay

Dallas-Ft. Worth area will be flood-proofed when engineers finish . . .

Four Dams for the Trinity

THE UPPER REACHES of Texas' Trinity River—long a flooding troublemaker—will soon be tamed.

The Corps of Engineers has four dam projects underway there, and plans further floodway improvements through Ft. Worth and Dallas, scenes of repeated damage. An added benefit will be storage of water to increase the supply to the expanding municipal systems of Dallas and nearby communities.

The Trinity rises south of the Red River watershed in the area southwest of Denison Dam's Texoma Reservoir. It flows 692 mi. southeast into Galveston Bay, draining 17,635 sq. mi. between the Brazos and Sabine Rivers. Dallas and Ft. Worth are the only sizeable cities in its valley. Respectively 505 and 559 river-miles from the mouth, they are in the upper basin area where four main forks—Clear, West, Elm and East—combine into the main stem. The Clear Fork flows into the West Fork at Ft. Worth; the Elm Fork joins it downstream just above Dallas to form the Trinity River. East Fork enters the Trinity 30 mi. below.

The four forks of the frisky Trinity have a long record of unbecoming behavior, and only this spring the Clear Fork overtopped and breeched existing levees at Ft. Worth, causing a loss of ten lives and $12,000,000 in damage (ENR May 26, p. 35).

Additional destruction downstream brought total damages to $15,600,000. Army Engineer projects already authorized to the tune of $80,000,000 should change that picture.

Four rolled-earth flood control dams are under construction: Benbrook (on the Clear Fork); Garza—Little Elm (Elm Fork); Grapevine (Denton Creek, a tributary entering Elm Fork below Garza); and Lavon (East Fork). An accompanying table lists their vital statistics.

Benbrook project

Benbrook is the only one of the four dams that will protect Ft. Worth, 10 mi. northeast. The project was the first of the group to get underway and is farthest along.

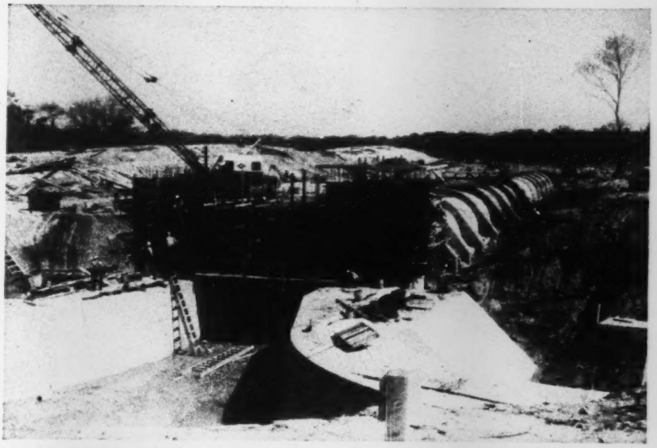
Outlet works near the right (east) abutment are about 70 percent complete under a $1,000,000 contract held by Ottinger Bros. Construction Co. of Oklahoma City. It includes twin 6½ x 13-ft. gate-controlled intakes with a transition to a single 13-ft. dia. 520-ft. reinforced concrete conduit through the dam embankment. Two gated 30-in. steel pipes embedded in the base of the main conduit provide low-discharge flow.

Embankment is being placed by List & Clark Construction Co., Kansas City, Mo., under a $4,260,000 contract for dam completion. Sandy clay from borrow pits just up- and down-stream from the dam axis is spread in 6-in. layers and compacted by seven passes of a 450-psi. sheepsfoot roller to reach a 92 percent modified AASHO density. A cutoff trench excavated through alluvial gravel and sand to limestone bedrock and backfilled with impervious material prevents under-seepage. The dam's upstream face is protected by 1½ ft. of riprap over a 6-in. gravel filter blanket.

An unusual notched concrete spillway is also included in List & Clark's contract. The spillway—first of its type to be built by the Corps of Engineers—has a 500 ft. wide overflow section with a 100x14-ft. rectangular notch at the center. Both sections are ogee-shaped and are uncontrolled.

The depressed part of the spillway, 14 ft. lower than the rest, will start discharging early during a rapid rise in water stage (common in the Clear Fork area) to act as an additional brake to flatten flood peaks below the dam. However, storage provided between the top of the conservation pool and the crest of the notch is sufficient to control any upper Clear Fork floods that have occurred during the 24-yr. period of record.

The notch will discharge 20,000 cfs. before the higher section of the spillway is overtopped. This discharge is twice the minimum bankfull capacity of the lower Clear Fork, but is less than one-third the capacity of the leveed floodway through the city. Thus, the ungated notch establishes a pool level, not subject to manual control, above which the reservoir operates primarily for Ft. Worth's protection.



BENBROOK OUTLET CONDUIT is nearly complete. Steel panel forms are being readied to pour the gated intake structure.

LIMESTONE IS DRILLED for blasting from the spillway area at Benbrook. The drill and its air compressor are mounted on a converted dump-truck chassis.

AN ASPHALT SEAL is sprayed on the walls of the excavation for Grapevine Dam's outlet works to prevent weathering of shale and sandstone.

Garza-Little Elm project

Garza—Little Elm Dam is by far the largest of the upper Trinity projects. It will give flood protection to Dallas 22 mi. southeast, and will store water for that city's supply.

The new reservoir will flood an existing water supply dam and reservoir (Garza-Lake Dallas) built by the city in 1928. In an agreement with Dallas, the government was granted the right to use the city's land and to breach its dam in return for an equal amount of storage in the new reservoir. This was set at 105,000 ac. ft., figured on the present capacity of Lake Dallas, less a 50-yr. deposition of silt. Dallas also has purchased from the government an additional 310,000 ac. ft. of storage in Garza-Little Elm Reservoir. The price, determined on an incremental construction cost basis, is estimated at $3,430,000. Water will be released to the river as needed, to be picked up downstream at the city's pumping stations.

Dam construction will be similar to Benbrook's, with the exception at the notch in the spillway. One contract is underway now. T. C. Cage and Dean Skinner of San Antonio are putting in 6,200 ft. (510,000 cu. yd.) of embankment high on the right abutment for $142,900.

Grapevine, 17 mi. northwest of Dallas, is another combination flood control and water supply dam. The cities of Highland Park and University Park (independent municipalities entirely surrounded by Dallas) are paying $607,000 for 50,000 ac. ft. of storage; Dallas is buying 85,000 ac. ft. for $1,500,000. As at Garza, the storage price covers the cost of increasing the dam size to handle the extra water.

J. W. Mosley Construction Co. of Grapevine is nearing completion of an $866,000 contract for 3,175,000 cu. yd., or about half of the embankment. Adjacent borrow pits furnish both pervious and impervious materials so the dam is a zoned fill. It varies in three stages, or zones, from a highly-impervious material in the core trench and upstream section of the embankment to a lighter type downstream.

Construction of outlet works and spillway was started recently by Russ Mitchell Inc. and Wyche & Bruce of Houston under a $2,000,000 contract. The base of the outlet works is in sandstone and shale that must be sealed to prevent weathering. Within four hours after they are exposed, walls of the cut are sprayed with asphalt, while the bottom is covered

AT LAVON DAMSITE, a rear-dump wagon is loaded by dragline to haul impervious fill to the old river channel.

with a 3-in. concrete blanket.

Lavon Dam is to control the East Fork, which has a small streambed and a wide fertile valley subject to frequent floods. It is 25 mi. northeast of Dallas in the "black land" region where gumbo predominates.

The dam is founded on clay, has no core trench, and incorporates fat, heavy clays in its fill, so embankment slopes are quite flat (up to 1 on 8) Last year 500,000 cu. yd. of embankment was completed, and J. W. Moorman & Son, Muskogee, Okla., began work this spring on a $2,090,000 contract for spillway excavation and embankment work. It includes 3,200,000 cu. yd. of rolled fill.

Unlike the three other dams, Lavon has no convenient low-elevation outlet works through the embankment that can be used for easy stream diversion during closure of the fill. Instead, water will be turned through the spillway. East Fork already has been diverted into a new channel at the damsite so its old bed can be excavated and backfilled with impervious material. Later, the stream will be shifted to the spillway.

STATISTICS ON NEW TRINITY RIVER DAMS

		Benbrook	Garza-Little Elm	Grapevine	Lavon
Project cost	$ millions	16.5	26.6	16.6	16.4
Completion date		1951	1953	1951	1952
Drainage area	sq. mi.	416	1,648	688	764
Embankment					
Length	ft.	9,200	33,300	12,850	9,540
Height (max.)	ft.	130	125	137	69
Base width (max.)	ft.	770	760	890	710
Crown width	ft.	20	20	28	28
Crown elev.	ft.	747	560	588	502
Spillway		notched	uncontrolled	uncontrolled	gated
Crest length	ft.	400 100	560	500	480 (net) (x)
Crest elev.	ft.	724 710	532	560	(x) (x)
Discharge capacity	cfs.	172,000	216,800	182,500	347,500
Outlet conduits	dia.	1—13-ft. 2—30-in.	1—16-ft. 2—60-in.	1—13-ft. 2—30-in.	5—36-in.
Construction quantities					
Embankment	cu. yd.	5,580,000	12,505,000	6,678,000	3,737,000
Concrete	cu. yd.	60,200	57,500	32,000	53,300
Steel	lb.	1,630,000	6,152,000	3,850,000	6,668,000 (xxx)
Reservoir Capacity					
Flood Control	ac. ft.	170,400	526,700	238,200	275,600
Conservation	ac. ft.	88,200	21,000	25,000	105,000
Contract Water	ac. ft.	———	415,000	135,000	———
Total Storage	ac. ft.	258,600	962,700	398,200	380,600

(x) Twelve 40 x 28-ft. tainter gates. (x) (x) Crest of weir: 462; top of gate: 490.
(xxx) Includes gates.

Lavon's spillway will be around the right end of the dam. It will consist of twelve 40 x 28-ft. tainter gates set between 8-ft. piers over a low weir, with 36-in. low-flow outlet conduits through the five central piers. Storage and control rooms and a stand-by generator for gate operation will be built into a flanking non-overflow section of the structure.

No new dams are presently planned for the West Fork, since three existing structures already control it above Ft. Worth. Of the three, Bridgeport and Eagle Mountain are mainly for flood control; Lake Worth is primarily for city water supply. There also are three old dams in the Dallas area but their flood control value is incidental.

Further protection will be given Ft. Worth and Dallas by two floodway projects that will strengthen and raise present levees and clear better channels through those cities. For this, $1,400,000 has been authorized at Ft. Worth; $1,700,000 at Dallas. An increase in the scope of the work at the latter city has been favorably recommended. The additional work is estimated at $4,274,000, with the city contributing $762,000 for pumping plants and pressure sewers for interior drainage behind the levees.

Project benefits

When the Army's projects are completed, over 1,000,000 acres of fertile farm land subject to flooding will be saved, river-bottom property valued at $50,000,000 in Ft. Worth and $200,000,000 in Dallas will be protected and made available for industrial use, and cities will be assured a firm supply of water.

In addition, the work underway and in prospect has revived Dallas' old dream of becoming a seaport to rival Houston. Proponents of the scheme view these projects as first steps for future canalization of the Trinity.

All the Army work on the Trinity headwaters is being handled by James A. Cotton, engineer in charge of the Corps of Engineers' Ft. Worth suboffice, under Lt. Col. Ellsworth I. Davis, district engineer at Galveston. C. F. Swenson is assistant engineer in charge; D. R. Ketchum is chief of the construction branch. The following are resident engineers on the dams under construction: C. J. Kocian (Benbrook); J. J. Russell (Garza-Little Elm and Grapevine); and W. E. Williams (Lavon).

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DEVELOPMENTS ABROAD

Credit for Mexican R.R.'s

Mexico—The directors of the Export-Import Bank of Washington have announced authorization of additional credits in the total amount of $17,900,000 for the rehabilitation and development of Mexican railroads.

Two credits were extended, one of $12,900,000 to Nacional Financiers, S.A., for the improvement of the government-owned National Railways of Mexico, and the other of $5,000,000 to the Southern Pacific Railway of Mexico, a wholly-owned subsidiary of the Southern Pacific Railway of the United States.

Both credits carry the full guaranty of the Mexican government, and the Southern Pacific credit represents a sharing with this private enterprise of funds previously earmarked for Mexican government projects.

The credits are to be amortized over a 12-year period and bear interest at the rate of 3½% per annum.

The dollar funds are to be used only for the purchase in the United States of equipment, materials and services for the rehabilitation and development of the two railways. They will be supplemented by peso funds to be supplied by the Mexican Government and, in the case of Southern Pacific, by that company.

"The improvements in the Mexican railway system contemplated under these credits," said Herbert E. Gaston, Chairman of the Export-Import Bank, "are part of a general program of railway rehabilitation in Mexico for which the bank has previously lent $62,000,000, of which $22,000,000 has been repaid.

The combined dollar and peso expenditures to be made on the National railways will include, besides the provision of new motive power and other equipment, the rehabilitation of roadbed and service facilities so as to permit more rapid traffic and more efficient use of rolling stock, particularly on the main international lines from Mexico City to the border at Nuevo Laredo and from Queretary to Juarez.

The Southern Pacific of Mexico serves the west coast from Nogales (Sonora and Arizona), where junction is made with the Southern Pacific of the U. S., 700 miles south through a rapidly progressing region to Guadalajara. Its traffic, which includes winter vegetables as well as minerals for American markets, has been growing in volume in recent years.

This is true also in the case of the network of 7,300 miles of the National Railways, notably the lines from Mexico City to and through the industrialized regions of North Mexico and to the United States border.

Power

India—There'll be $1 billion worth of business for world material and equipment suppliers in the power dam program which India now has under construction or consideration. Total program will cost $3.9 billion to complete, and nearly 30 percent of that will be required for non-Indian purchases. A contract for machinery worth $15,000,000—for the Damodar Valley project—already has been signed with the International General Electric Company. The Minister for Works, Mines and Power said a conference of engineering and financial experts is soon to be held to establish a priority schedule for the power projects.

Bridges

Australia—New South Wales' Main Roads Department has adopted bridge loading standards of the American Society of State Highway Officials known as loading "H20-S-16-44." Minor departures have been made.

Effect of the new loading is most pronounced on spans between 40-100 ft. Deck slab thicknesses will increase slightly and stringers and cross girders will be heavier. On an average, steel structures will require 5-10 percent more material and costs will be increased proportionately. Cost of simple or framed beam concrete bridges will increase—about 6 percent.

AUSTRALIA DRIVES FOR WATER as the keystone of its postwar development. Part of the campaign will be an extension of the Eildon Weir, on the Goulburn River, Victoria, from its present capacity of 306,000 ac.-ft. to 2,350,000 ac.-ft. This will make the dam Australia's largest water storage site. In addition to extending old dams, new ones are being built. The River Murray Commission controls the largest water conservation works in Australia, and allocates water between Victoria, New South Wales and South Australia. (Eastern Publishers Photo)

LOW COST CONCRETE—Pictured above is the first unit of a 1,000-dwelling program for native housing at Dakar, French West Africa. These homes are being made of reinforced concrete placed pneumatically on "balloon"-type forms of rubber-coated nylon fabric. They are tied to the floor slab and inflated to a pressure of 2 to 5 oz. per sq. in., depending on the size of the building. The concrete is reinforced with mesh. Door and window assemblies are placed in position against the form and become a part of the structure. This type of construction is now being introduced in Mexico, Brazil and South Africa. Wallace Neff, of Los Angeles, is architect for Airform Construction, the patentee.

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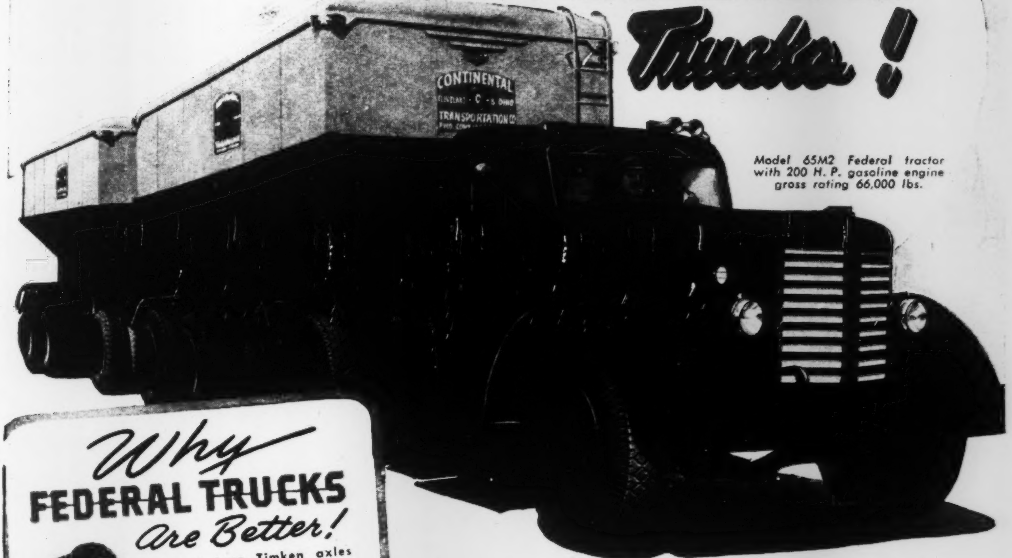

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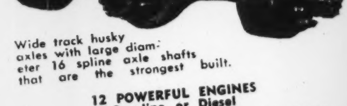

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Utica is one of the cities included in the survey of "Survival and Retirement Experience with Water Works Facilities", including cast iron water mains, conducted under the auspices of the American Water Works Association, the New England Water Works Association and the Institute of Water Supply Utilities. The recently published report of the findings of the survey shows that 96% of all 6-inch and larger cast iron water mains ever laid since 1817 in 25 representative cities are still in service.

Utica's experience with cast iron water mains, therefore, while remarkable, and eminently satisfactory to her taxpayers, is not exceptional.

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SERVES FOR CENTURIES

MEN AND JOBS

To honor **R. B. Simms,** who has done remarkable work in the development of the water system of Spartanburg, S. C., during the last 29 years, the name of the South Pacolet Filter Plant has been changed to the R. B. Simms Filter Plant. The average daily pumpage in 1920 was about 1,000,000 gal. Today it is over 8,000,000 gal., and the rates charged to the consumer compare favorably with those of any other city in the South. There has never been a single case of illness traceable to water furnished by the city, nor has there ever been a shortage of water. Government engineers located Camp Croft at Spartanburg largely because of the abundance of pure water.

Ernest G. Raynor of Pierre, S. D., district construction and maintenance engineer for the Public Roads Administration, retired recently.

Theodore T. Loy, is engineer of Ward County, N. C., succeeding Charles A. Truax who resigned to give his full time to the Nordstrom & Truax Construction Co.

Lt. Col. H. K. Howell has been appointed to the Rock Island, Ill., district, Corps of Engineers, to be resident engineer of the Coralville flood control project on the Iowa River near Iowa City, Ia.

Charles Capper, formerly Wayne County, Iowa, engineer at Corydon, has been named engineer of Davis County, succeeding the late Thos. T. Teall.

G. T. Papageorge is director of public works of Montgomery County, Md. He has been administrative director of the Fulton County, Ga., Planning Commission. A graduate of Georgia Tech, he had served as senior resident engineer and traffic engineer for the Georgia highway department. He also had been planning engineer of public works for the Federal Works Agency and the director of the public works panel of the Georgia Agricultural and Industrial Development Board.

Ralph Budd, civil engineer, in September will retire as president of the Chicago, Burlington & Quincy Railroad. At 20 he entered the engineering department of the Chicago Great Western Railroad. From 1902 to 1906 he was with the Chicago, Rock Island & Pacific as general superintendent of construction and division engineer. The following three years he was chief engineer of the Panama Railroad. He became president of the Burlington in 1932. In 1941 he was awarded the John Fritz medal partly because of his introduction of the light weight, streamlined train.

Thurman C. Tejan, formerly field representative for the organization, and a graduate of Pennsylvania State College and the University of Kentucky Law School, has been named executive secretary of the Constructors Association of Western Pennsylvania, succeeding the late Roy A. MacGregor.

Albright & Friel, Inc., consulting engineers have removed their office to 121 S. Broad St., Philadelphia 7, Pa.

W. B. Gibson, for 16 years engineer for Lanark County, Ont., has become engineer of Hamilton County.

C. T. Warwick has been appointed chief engineer of the seventh highway district at Pikeville for the Kentucky Highway Department, succeeding **R. L. Parker,** who has been named assistant director of the maintenance division with headquarters at Frankfort.

Alfred H. Fletcher has been appointed director of the Bureau of Environmental Sanitation of the New Jersey State Department of Health. A Navy veteran of World War I, he received his degree of B.S. in sanitary engineering at M.I.T. in 1921 and was awarded his master's in the same at Harvard in 1932. He started with the Rockefeller Foundation and was assigned to the U. S. P. H. station at Memphis, Tenn., on malaria-mosquito control. He was later with the New Hampshire and Louisiana state departments of health. He also taught sanitary engineering at the school of hygiene and public health at Johns Hopkins University.

Col. Willis E. Teale, who has been district engineer, Corps of Engineers, at Jacksonville, Fla., for nearly two and a half years, has been assigned to the European Command at Bremerhaven, Germany. In the Jacksonville district, Colonel Teale, U. S. Military Academy, 1917, has supervised river and harbor and flood control work. He has had a distinguished career in the Army as a regular officer and as an engineer. As chief engineer, Army Services of Supply, in the Pacific Area he was awarded the Distinguished Service Medal, and he also earned the Legion of Merit for his outstanding services as the commandant of the Army Engineer School.

Col. R. G. Lovett, district engineer in Vicksburg, Miss., since May, 1946, has been transferred to the Office of the Chief of Engineers in Washington. He left June 1 to be Asst. Chief of Engineers for supply and procurement. He will be succeeded by Col. Benjamin Fowlkes at the Industrial College in the District of Columbia. Colonel Lovett is a graduate of West Point. His Corps of Engineers duties have taken him to the Philippines and Hawaii. For several years he was in the New Orleans district. Prior to the war he was sent to Jamaica, West Indies, to help with the construction of a military base. Later he was with the Third Army in Europe.

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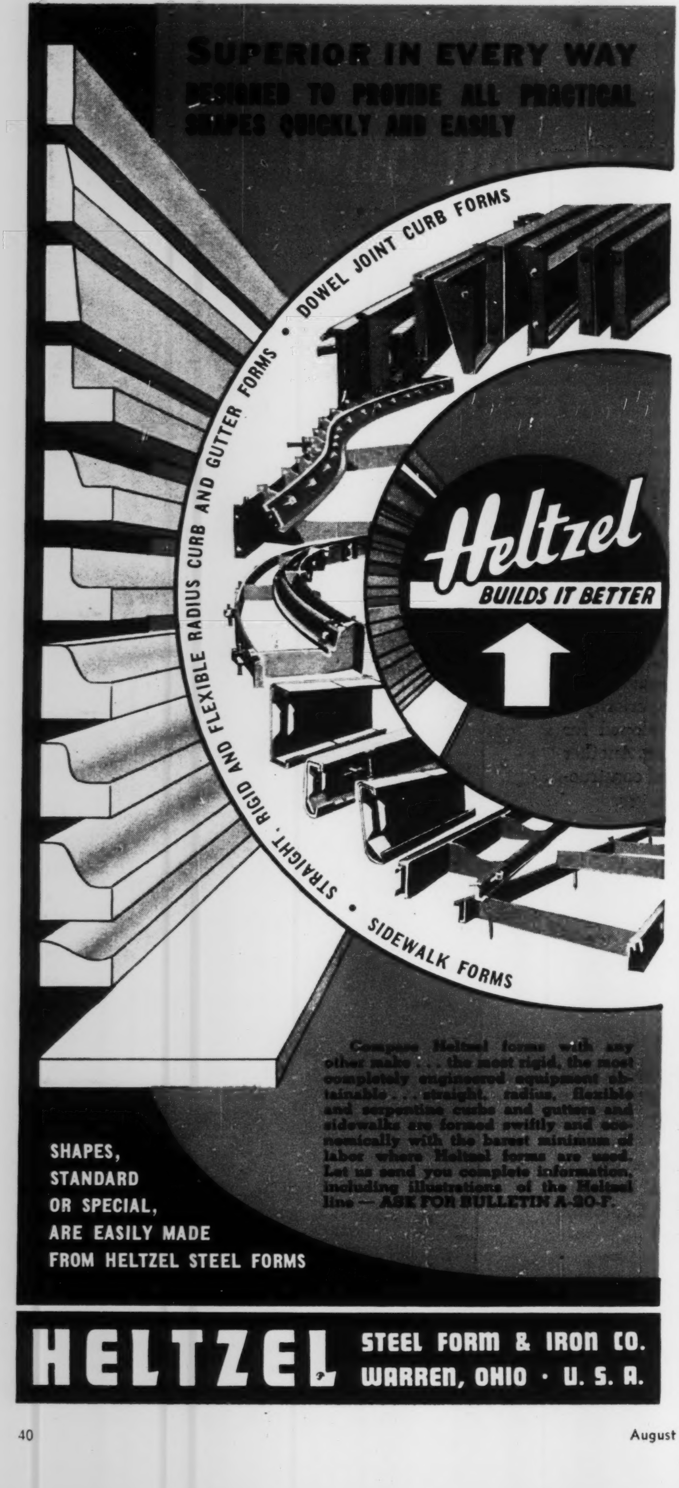
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PRINDLE STREET
SEWAGE PUMPING
STATION

Laurel Gibbs, city engineer of Chehalis, Wash., left, discusses the recently completed addition to the sewerage system with H. Loren Thompson, partner, Stevens & Koon, engineers who designed the new Prindle St. sewage pumping station for Chehalis.

H. Loren Thompson, left, partner, and Marvin Runyan, resident engineer, both of Stevens & Koon, consulting engineers of Portland, Ore., discuss progress on the new 1.4-mgd. sewage treatment plant which is now under construction for Chehalis, Wash.

Presiding at one of the sessions during the recent University of California Street and Highway Problems Institute was Wallace B. Boggs, county surveyor of Alameda County. Much emphasis was placed during the institute on problems at the county road department level.

MUNICIPAL AFFAIRS

Progressive Milwaukee

According to a report by R. W. E. Perrin, housing authority director at Milwaukee, Wis., that city stands a good chance of getting $80,000,000 federal aid for public housing and $5,000,000 for clearance of slum areas. Applications already are prepared for 6,750 dwelling units.

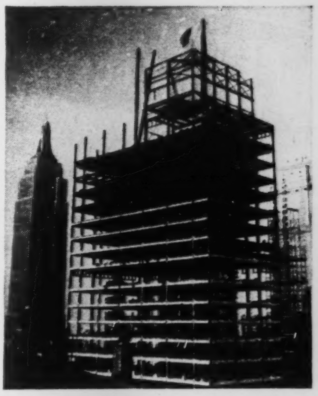
There is a movement on foot to hire outside experts to write a new building code for Milwaukee. Common Council President Milton J. McGuire said that the experts would not be required to write an entirely new code if the one now being drafted by the city's building code committee can be adapted to meet needs as they arise.

Referring to Milwaukee's proposed program for urban redevelopment, Wm. L. C. Wheaton, associate professor of regional planning at Harvard University, has said: "It seems to me that this program is the most significant effort in this field being undertaken by any major city in the country today."

Typical disposal program

Connecticut's State Water Commission recently heard officials of Norwich in relation to recommended improvements in sewage disposal which were estimated in a 1946 study to cost $1,655,000. Richard Martin, director of the commission, pointed out that the board's engineers had found that the city's sewage is polluting the Thames, Yantic and Shetucket Rivers and that it is necessary to build seven pumping stations, about 28,000 ft. of interceptor sewers, force mains, and a treatment plant. The city discharges about 3,450,000 gal. of untreated sewage and 500,000 gal. of treated sewage daily into those rivers.

Director Martin suggested that in order to ease the financial burden, the city might carry out the proposed construction over a number of years. He recommended that the commission order the city to advertise for bids by Oct. 15 to build 3,140 ft. of interceptor sewers and force mains costing $182,000; an outfall sewer costing $88,000, and a sewage treatment plant costing $618,400, or a total of $888,400. As these figures are based on 1948 prices, the cost may be somewhat less now. He also recommended that the commission order the city to complete the above by 1951, and to set up a program for advertising for bids on the rest of the development. The city asked for an extension of time until 90 days after Oct. 15 to advertise for bids. The commission took this under advisement. Financing by bonds, taxes and use is being considered by the municipality.



NO TIME WASTED—Builders of New York's latest skyscraper—the 36-story office building at 100 Park Avenue—claim a record: the steel erection on the project. Steel began going up early in March, (ENR March 10, p. 10) while excavation work was still underway, and was completed July 26. Initial occupancy now is scheduled for December. The building occupies a blockfront site and will have 840,000 sq. ft. of floor area. It will be completely air-conditioned. Cost of the structure will be $20,000,000.

Municipal Briefs

Canton, Ohio, is considering a proposal for a municipal income tax to furnish revenue for $1,000,000 worth of traffic arteries; a $3,000,000 storm sewer installation; and a $2,000,000 city hall.

According to the Producers' Council, Inc., the supply of housing in U. S. cities has increased almost one-fourth since 1940. The usable housing supply today, it is said, exceeds 36.8 units—7.1 million units greater than in 1940.

An institute for traffic training, cosponsored by Yale University and the National Committee for Traffic Training, will be held at Yale, Sept. 6-16. More than 200 city officials and others will attend.

Miami, Fla., is entering upon a capital improvement construction program totaling nearly $2,000,000, with many other projects to follow soon. A contract for further expansion of the Orange Bowl stadium by adding 5,000 seats has already been let for $188,962.

Col. Frank H. Forney, U. S. district engineer at Buffalo, N. Y., has called a public hearing for Sept. 22 to discuss long-range plans for modernization of Buffalo's harbor. Business, civic and marine interests are invited to attend. Upon this hearing will hinge the question of whether millions in federal funds will be sought for physical improvements such as are to be made at Toledo, Cleveland and other lake ports.

North Carolina plans to market $7,500,000 in six-months anticipation notes for development of port terminal facilities at Wilmington and Morehead City.

Back to Colonial Days—The town of Chapel Hill, N. C., is giving its business section an architectural face-lifting to fit the Colonial-Georgian theme of the campus of the 160-year-old University of North Carolina, around which much of the life of the community centers. Half of the town's 15,000 population is made up of students. Above is pictured a new grocery store which has gone Colonial. (Wide World Photo.)

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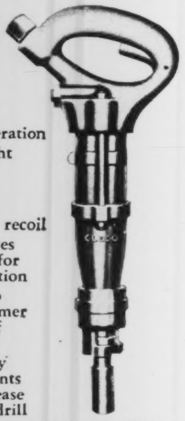
If you want holes in masonry walls (or floors) so you can install plumbing, heating, wiring or anything else . . . you can drill them at a lower cost with the Cleco Handi-Drill.

The Cleco Handi-Drill is a lightweight self-rotating rock drill that hits and rotates at the same time for faster penetration.



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ENGINEERING SCHOOLS

Industrial Hygiene

Doctors and engineers will join forces to study problems of industrial health, when New York University inaugurates a new course in industrial hygiene in September.

The new course will be offered cooperatively by the College of Engineering and the Institute of Industrial Medicine of the New York University-Bellevue Medical Center. It was planned to meet the growing demand for professional workers trained in the techniques of industrial hygiene. It will be open to physicians and to engineers holding bachelor degrees in sanitary, chemical, mechanical or civil engineering, or having the equivalent training in the natural sciences, including chemistry and biology.

At the beginning of the course, physicians and engineers will attend the same classes and will study industrial medical practice, biostatistics, environmental conditions in work places and their relationship to disease, toxicology and industrial physiology. Following this the physicians and engineers will be separated and the doctors will study industrial medical practice, occupational diseases, toxicology and in-plant training, while the engineers will concentrate on environmental conditions and their control, and in-plant training.

The new course will begin on Sept. 26, and will embrace nine months of didactic teaching and three months of in-plant work. The tuition fee will be $600, plus registration. Further information may be obtained from The Dean, New York University College of Engineering, Bronx 53, New York, or from The Dean, New York University Post-Graduate Medical School, 477 First Ave., New York 16, N. Y.

Research Council

To coordinate research and also to serve as an effective agency for solving research problems for the Detroit industrial area, a special Engineering Research Council has been established at the University of Detroit.

Dean Clement J. Freund says:

"It is the desire of the university that it serve as an important agency for aiding industrial concerns in solving their problems, particularly those involving coordination of different technological fields."

He continued, "Research problems frequently involve many branches of science and varieties of apparatus, and require the efforts of several departments working together as a team. It is the function of the Research Council to unify such efforts."

Faculty News

Robert C. Sheldon, Dunkirk, Ohio, has been appointed assistant to Dean A. E. Webb of the engineering department of Ohio Northern University, Ada. Mr. Sheldon was an assistant engineer at the Panama Canal from 1928 to 1942, when he became a commander in the Civil Engineering Corps of the Navy.

Frederick W. Trezise, formerly in charge of engineering courses at the Galesburg, Ill., branch of the University of Illinois, has been appointed dean of the college of engineering sciences at the Navy Pier Branch of the university in Chicago. He succeeds Randolph P. Hoelscher, who has returned to the main campus at Champaign-Urbana as head of the department of general engineering drawing.

The Galesburg branch was discontinued July 1. Prof. Trezise, a graduate of the University of Wisconsin, was professor of mathematics at Lawrence College, Appleton, Wis., from 1921 to 1942.

J. G. Cler and William H. Rayner, associate professors of civil engineering, University of Illinois, have been named professors. Other promotions from associate professor to professor are Stanley G. Hall and L. D. Walker, general engineering drawing; and J. O. Smith, H. L. Langhear, W. L. Collins, theoretical and applied mechanics. Advanced from assistant professor to associate professor of civil engineering are W. E. Hanson, Ellis Danner, J. C. Deitz and M. O. Schmidt.

John G. Duda, of Newport, R. I., has been appointed instructor in civil engineering at Illinois Institute of Technology. He has been an instructor at the University of Missouri School of Mines and Metallurgy, Rolla, Mo., while completing work toward his masters' degree.

Educational Notes

A school for water plant operators and superintendents will be held at The Pennsylvania State College, Sept. 19 and 23, under the direction of the Sanitary Engineering Division of the college and sponsored by the Pennsylvania Department of Health and the Pennsylvania Water Works Operators' Association. Only the first 100 applicants can be admitted. Programs, application blanks and other information may be obtained from the Sanitary Engineering Division, the Pennsylvania State College, State College, Pa.

New officers of The American Society for Engineering Education are: President, Thorndike Saville, dean of engineering at New York University; vice-presidents, B. J. Robertson, H. H. Armsby, F. E. Terman, and F. M. Dawson, James S. Thompson has been re-elected treasurer.

A $496,820 contract has been signed by Vanderbilt University, Nashville, Tenn., for a new building to house the school of engineering. Work was started immediately, as the building is to be completed within 300 days.

The 300-foot, all-brick, colonnaded structure will be in the center of the campus on Twenty-fourth Avenue South between Buttrick and McTyiere halls, and will house the school of civil engineering as well as other engineering schools. Initial construction work also is expected to begin within the next few weeks on the new $1,500,000 memorial gymnasium and field house on the campus.

First award of the $2,000 scholarship in civil engineering at North Carolina State College, Raleigh, N. C., offered recently by the Norfolk and Southern Railway Co. to children of its employees, has been made to Louis Stanton Hales of Stantonsburg, N. C.

The Economic Cooperation Administration has announced that it will assist in bringing about 50 British engineers to the United States for one year of graduate study in leading technical schools and on-the-job training in factories to learn American production methods. ECA said that the training period may be extended to cover an additional year's study.

The training project, undertaken with the cooperation of the British Government, is part of ECA's technical assistance program which is aimed at increasing European industrial production and efficiency.

Registration has opened for a new two-year technical aid course in engineering drafting, offered for the first time this fall in the University of Minnesota's institute of technology. The course is for men and women who do not wish to spend the time to prepare themselves as professional engineers. Admission requirements are high school graduation with two years of high school mathematics.

AMERICAN BUSINESS BUILDS WITH INGALLS STEEL

Ingalls furnished and erected the structural steel (all welded) for this new Esso Standard Oil Co. office building at Baton Rouge, Louisiana.

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Carson & Lundin, Associate Architect
Strobel & Salzman, Structural Engineers
Guy B. Panero, Mechanical Engineer
John W. Harris Associates, Construction Management

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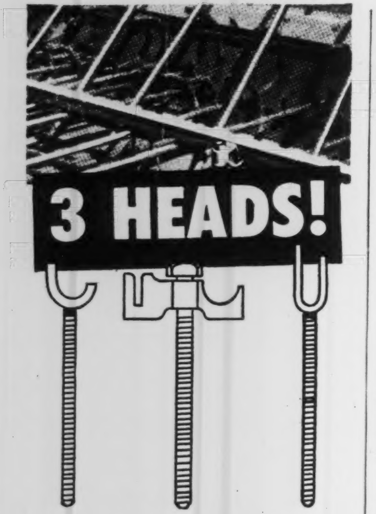

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UNIT PRICES BID BY CONTRACTORS

Philadelphia sewer bids offered ENR readers

Engineering News-Record will send its readers copies of bid tabulations on a large sewer job for the department of Public Works, Philadelphia. This interceptor consists of 3,727 ft. of 10 ft. dia. sewer and 1,532 ft. of 9 ft. 6 in. dia. sewer, all but 70 ft. of which is to be in a tunnel, also part of the work.

Three bids were received July 29. The low bidder, James N. Driscoll Co., Philadelphia, set his price at $1,827,690, compared to the engineer's estimate of $2,100,000 and the second bid of $1,896,948. The high was $2,493,100. Contract time is 450 calendar days.

Transportation by rail, highway and water available. This project is known as the Lower Delaware Low Level Intercepting Sewer. In addition to the footages of sewer, units include 23,100 cu. yd. of tunnel excavation and 1,820 cu. yd. of open cut.

Vanguard low bidder on Annapolis bridge

Vanguard Construction Co., of Annapolis, Md., was the low bidder Aug. 2 on a steel and concrete bridge to be built across South River, near Annapolis, by the Maryland State Highway Department. The Vanguard bid totaled $256,308. Six other bids ranged up to $435,888.

The bridge consists of three 66-ft. spans, carrying two 39-ft. roadways separated by a 4 ft. median strip. Piers are concrete pedestal type. No contract time is stipulated. Wages range from $1.00 to $2.65. Rail, water and highway transportation available. The navigable channel must be maintained for small craft. Major quantities include 9,600 ft. of cast-in-place concrete piles, and 1,300 cu. yd. of class A concrete.

Strong Company gets Utah road job

Strong Company, of Springville, Utah was the successful bidder on 5.853 miles of U. S. Highway 89 and 91, between North Bountiful and Farmington, Utah. The Strong bid, $277,454, was received Aug. 2, by the State Road Commission of Utah, which awarded the contract Aug. 4. Four other bids ranged up to $307,900.

This road is to be of portland cement concrete, 24 ft. wide, with 10-ft. gravel shoulder on one side and 4-ft. gravel shoulder on the other; bituminous materials for connections at crossroads. There is a good supply of concrete aggregates nearby. Contract time is 120 working days. Rail and highway transportation available. Wages range from $1.275 to $2.00.

Major quantities include 76,450 sq. yd. of concrete 8 in. thick, 45,000 tons of crushed rock or gravel for the shoulders and 1,800 tons of plant mixed bituminous surfacing. Subgrade-shaping was let on a per-mile basis.

Outfall sewer 3 mi. long to be built for Oakland

Two contracts are included in an outfill sewer project for the East Bay Municipal Utility District (California). The project is 15,000 ft. long, 9,100 ft. of which is on land (one contract) and the remaining 5,900 ft. of which is subaqueous (one contract), extending from treatment plant in Oakland near eastern approach to the San Francisco-Oakland Bay Bridge, across existing landfill and into deep water between Oakland and Yerba Buena Island. Land section is 9 ft. dia., on piles, and subaqueous section is 8 ft. dia., in trench on the bottom. Depth is 45 ft.

For the land contract, Ben C. Gerwick, San Francisco, and George Pollock Co., Sacramento, were low, at $1,687,916 in bidding July 27; high of seven was $2,632,863. Healy Tibbitts Const. Co., San Francisco, was low of five on the subaqueous work, at $1,267,072; high was $2,575,236.

Notable among the conditions of construction for the subaqueous work is the fact that there is strong tidal action in San Francisco Bay. Major quantities on the land section include 69,000 cu. yd. of trench excavation, 37,700 cu. yd. of backfill and compaction; 2,200 cu. yd. crushed rock base, 400,000 sq. ft. of sheeting to be left in place, 131,354 lin. ft. of timber piles up to 70 ft. long, 96,484 lin. ft. timber piles more than 70 ft. long. Piledriving is a separate item, with prices broken down into ten-foot ranges, from "up to 40 ft." to "110-120 ft." Excavation for the subaqueous section is broken down into ranges of depth from mud to trench bottom.

Unit price reports on jobs cited in these columns will be mailed to readers of Engineering News-Record on request at no charge. Address: Manager, Business News Dept., Engineering News-Record, 330 W. 42nd St., New York 18, N. Y. Identify by quoting headline as used herewith, and be sure to give full mailing address.

Elections and Activities

Ray M. Lee, of the Ray M. Lee Co., Atlanta, Ga., has been elected president of the Georgia branch, Associated General Contractors of America. Other officers include C. R. Justi, first vice-president, Atlanta; J. T. Higgins, second vice-president, Thomasville; W. P. Rose, secretary, Atlanta, and Alvin Barge, treasurer, Atlanta.

R. H. Bacon has been elected president of the Chicago Technical Societies Council for 1949-50. He is vice-president of the Industrial Advertising Agency of Kreicker & Meloan, Inc. and president of R. H. Bacon & Co. For the last 25 years he has been active in engineering society work in Chicago having been chairman of the Chicago Section of the American Society of Mechanical Engineers in 1928 and President of the Chicago Engineers Club in 1947. The Chicago Technical Societies Council is made up of some 50 scientific engineering and technological societies, representing approximately 18,000 members.

MAJOR MEETINGS

New England Water Works Association. The Balsams, Dixville Notch, N. H., Sept. 13-16.

Public Works Congress and Equipment Show, Municipal Auditorium, Kansas City, Mo., Sept. 18-21.

Institute of Traffic Engineers. Wardman Park Hotel, Washington, D. C., Sept. 25-28.

Association of Western Engineers, Patterson Hotel, Bismarck, N. D., Aug. 22-25.

American Society of Planning Officials, Hotel Statler, Cleveland, Ohio, Oct. 10-12.

American Society for Testing Materials—First Pacific Area National Meeting, Fairmont Hotel, San Francisco, Calif., Oct. 10-14.

Federation of Sewage Works Associations, Hotel Statler, Boston, Mass., Oct. 17-20.

Metal Congress and Exhibition. Public Auditorium, Cleveland, Ohio, Oct. 17-21.

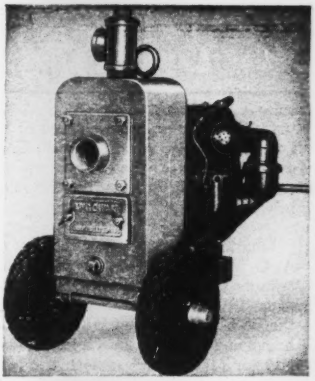
American Public Health Association, Hotel Statler and Hotel New Yorker, New York City, Oct. 24-28.

37th National Safety Congress, Stevens Hotel, Chicago, Oct. 24-28.

National Congress on Industrial Hydraulics, Sheraton Hotel, Chicago, Oct. 26-27.

Engineers Council for Professional Development, Edgewater Beach Hotel, Chicago, Oct. 28-29.

American Society of Civil Engineers, fall meeting, Hotel Statler, Washington, D. C., Nov. 2-4.



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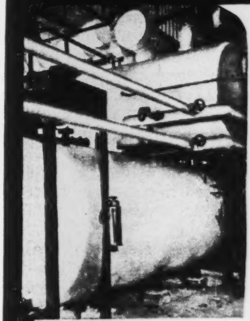

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OBITUARY

C. S. Sampson, 55, president of the Los Angeles Board of Harbor Commissioners and the Pacific Coast Association of Port Authorities, died July 28.

Charles Stewart, 64, president of A. C. Woods and Co., structural steel manufacturers, Rockford, Ill., died Aug. 1. He served for 30 years with the Wisconsin Bridge and Iron Co., being in charge of the Chicago office, and for four years was with the Vierling Steel Works, Chicago.

W. F. Pelissier, 64, civil engineer and surveyor, died at Marquette, Mich., Aug. 5.

Birney E. Trask, 81, former highway engineer and contractor, died at Minneapolis, Minn., recently. Mr. Trask, who was graduated from the University of Minnesota in 1890, was a civil engineering professor at Denison University in Granville, Ohio, from 1902 to 1910.

Anthony H. McGurry, 73, retired N. Y. City civil engineer, died Aug. 8, at Mount Vernon, N. Y.

Robert H. Ellis, 86, for many years prominent in the contracting field at Boston, Mass., died at Arlington, Mass., Aug. 6. He was formerly president of the construction company bearing his name, and retired in 1930.

Lendell D. Crowell, 44, president of the Asphalt Materials Construction Co., Indianapolis, Ind., a graduate of Purdue University and a former engineer with the Indiana highway department, was killed in an automobile accident July 27.

Wellington P. Hews, 68, civil engineer of Yakima, Wash., died there July 27. Graduated in civil engineering from the University of Maine, he worked with the Bureau of Reclamation before establishing the Yakima Cement Products Co.

Munro L. Abbott, 68, an engineer for 35 years in the Philadelphia, Pa., Bureau of Engineering and Surveys, died Aug. 9. A graduate of Princeton University, for a number of years he had charge of the city's sixth survey district. He retired in August, 1947.

Allen M. Graves, 64, state highway engineer for the northwestern Minnesota district, died Aug. 7.

George E. McCurdy, 66, an Akron, Ohio, civil engineer for 30 years and former partner in Barstow & McCurdy, until his retirement eight years ago, died on August 8 in Miami, Fla.

He received degree in civil engineering at Cornell University. After working for the Pennsylvania Railroad at Pittsburg he went to Chicago for the company to do grade separation work for five years. In 1912 he resigned and became superintendent of the Marquette Construction Co. in Chicago in the building of a sewer system and treatment plant at Glen Ellyn, near Wheaton, Ill.

When World War I began, Mr. McCurdy became associated with R. W. Pratt, Cleveland engineer, in building and enlarging the cantonment buildings at Camp Sherman. In 1922 Mr. McCurdy and E. D. Barstow, Summit County's sanitary engineer, formed a partnership of Barstow & McCurdy, which they incorporated in 1927, specializing in sanitary and hydraulic engineering.

Edwin C. Eller, 50, a consulting engineer who served as a colonel on the staff of Gen. Geo. S. Patton, Jr., in charge of the planning of field construction and the training of troops in that work, died at South Orange, N. J., Aug. 12.

Before entering the Army, he was chief engineer of the Passaic Valley Water Commission and consulting engineer for the Rahway, N. J., Board of Water Commission. And previously he had supervised the construction of a dam and water supply facilities in Bogota, Colombia. Latterly he had been connected with the Radio Corp. of America in an engineering capacity.

Samuel J. Carll, 82, former assistant superintendent of public works, Portsmouth, N. H., died in that city on Aug. 10.

Walter B. Avery, 61, Washington, D. C., contractor, died August 14 in Washington. A native of that city, he went into the contracting business just after graduation from business high school.

Mr. Avery was engaged in many large building enterprises, many of them involving government buildings in the nation's capital. At the time of his death, Avery had contracted for the construction of five new Montgomery County, Md., public schools. His construction of Wheeler, Inc., (auto dealers) premises, won him the Washington Board of Trade Award for the best building in its class in 1948.

CONSTRUCTION REPORTS

Bids Asked—Low Bidders—Contracts Awarded

Compiled by Business News Department—Engineering News-Record, 330 W. 42nd St., New York 18, N. Y.

ELSIE EAVES, Manager *J. A. MAHONEY, Reports* *M. R. ROESSLER, Statistics*

WATER SUPPLY

BIDS ASKED

September 6

Ia., Dallas Center—City, water supply and water softening, bldgs., equip., etc. $35,000. H. R. Green, 417 First Ave. S. E. Cedar Rapids, engr.

September 7

Ga., Valdosta—City, rebuilding 1 m. g. reservoir, Smith & Gillespie, P. O. Box 1048, Jacksonville, Fla., engrs.

September 8

✝Colorado—U. S. Eng., P. O. Box 1538, Albuquerque, N. M., imprv. water supply facilities, equipping water wells, John Martin Reservoir Proj., Caddoa, CIVENG 29-005-50-3. Bid date changed. CD 8/9.

Bids Asked

Tex., Galveston—W. R. Reid, 4002 Timon Blvd., Corpus Christi, c. i. waterlines, facilities. $40,000.

LOW BIDDERS

California—State Div. Architecture, P. Wks. Bldg., Sacramento, Aug. 9. imprv. water supply sys. in Castle Crags and McArthur-Burney State Parks, from J. P. Brennan, Redding, **$43,423.** CD 7/19.

La., Kinder—Town, Aug. 4, water sys., from Magnolia Constr. Co., 2120 N. 3 St., Baton Rouge, **$58,183.** CD 7/27.

Minn., Moorhead—City, P. A. Cook, clk., Aug. 5, water treatment plant, from T. F. Powers Constr. Co., Fargo, N. D., **$127,155.** CD 7/20.

Minn., Rochester—State Dpt. Admin., State Capitol, St. Paul, Aug. 10, elevated water tank at State Hospital, from Chicago Bridge & Iron Co., 332 S. Michigan Ave., Chicago, Ill., **$43,950;** water sys., at State Hospital, from C. G. Fraser, 506 N. Prior Ave., St. Paul, **$43,940.** CD 7/27.

N. C., Albemarle—City, City Hall, July 20, WW and sewerage imprvs., **(a)** furnishing and placing pipe **(b)** installing pipe **(c)** furnishing pipe only **(d)** water purfication plant **(3)** pumping equip. **(f)** electrical work **(g)** clear water reservoir **(h)** raw water reservoir **(i)** Yad. River Station. **(1)** Sect. 3 **(2)** Sect. 4 **(3)** Sect. 4 C **(4)** Sect. 4 D **(5)** Sect. 5 **(6)** Sect. 5E **(7)** Sect. 6 **(8)** Sect. 7 **(9)** Sect. 9 **(10)** Sect. 10 **(11)** Sect. 11 **(12)** Sect. 12, from Blythe Bros. Co., 424 S. Brevard St., Charlotte, **(a1) $237,343 (a2)** steel pipe, **$263,205 (a2)** PS concrete pipe, **$350,340*****from N. E. Brewer Co., 8 W. 3 St., Winston-Salem, **(b3)** cast iron pipe, **$99,317** asbestos cement pipe, **$66,330 (a5)** cast iron pipe, **$153,720** asb. cement, **$202,720*****from H. V. Alward Co., Bernardsville, N. J., **(b3)** PS concrete pipe, **$72,799 (b6)** asbestos cement pipe, **$28,145*****from G. E. Moore Co., Ind., Greenwood, S. C., **(a2)** cast iron pipe, **$372,930*****from Boyd & Goforth, Pineville Rd., Charlotte, **(b3)** steel, **$63,070** NPS concrete pipe, **$73,120*****from Armo Drainage & Metal products, Inc., 510 Edgewood Ave. N.E., Atlanta, Ga., **(c4)** steel pipe, **$250,345*****from Riddle & Simmons Constr. Co., Gastonia, **(b6)** cast iron pipe **$29,300*****from Lynchburg Pipe & Foundry Co., Lynchburg, Va., **(c6) $97,214*****from Skinner & Ruddock, Inc., 12 State St., Charleston, S. C., **(d7) $472,187*****from Morris Machine Works, Independence Bldg., Charlotte, **(e8)** Item 1 water purification plant, and Item 2, Yad. River Stat., **$24,366*****from Colter & Chapel, 850 4 St., Winston-Salem, **(f9)** Item 1, water purification plant, and Item 2, Yad. River Station **$10,287*****from W. F. Brinkley & Son, Granite Quarry **(g10) $84,000*****from W. E. Graham & Sons, Cleveland, **(h11) $64,550*****from V. B. Higgins Co., Greensboro, **(i12) $250,500.** CD 6/23.

Okla., Oklahoma City—City, City Hall, Zone 2, watermains serving Steve Pennington 3rd Addn., from Doerfler Constr. Co., 1229 S.W. 26 St., Zone 9, **$32,417.** Est. $40,900. CD 1/22/48.

CONTRACTS AWARDED

Ia., Ottumwa—City Bd. WW trustees, Ottumwa, WW imprvs., 2 water storage tanks, 1 tank, to Pittsburgh-Des Moines Steel Co., 1015 Tuttle Ave., Des Moines, **$142,500;** 1 tank, to Pressure Concrete Co., Florence, Ala., **$141,000.** Bids 8/10. CD 7/20.

Tex., Dallas—City, Earl Goforth, secy., City Hall, Main and Harwood Sts., c.i. watermains in Deerpath Village, Contr. 270, to E. L. Dalton Co., 3003 Hawes St., **$28,362.** CD 12/1.

Tex., Houston—Hulen L. Downey, 606 McCarty St., c. i. waterlines, across road from Sheldon Reservoir and in Beaumont Rd., own forces. Approx. **$65,000.**

SEWERS, WASTE DISPOSAL

BIDS ASKED

August 30

Minn., Richfield (P. O. Minneapolis)—Village, J. Stewart, clk., Richfield, 4,310 lin. ft. 15- to 35-in. storm sewers, 936 lin. ft. 24 in. curb and gutter, etc., Dist. No. C-1; 9,050 lin. ft. 15- to 60-in. storm sewers, 13 manholes, 76 catch basins, 1,872 lin. ft. 24 in. curb and gutter, etc., Dist. No. D-1; 7,020 lin. ft. 15- to 48-in. storm sewers, 11 manholes, 48 catch basins, 1,716 lin. ft. curb and gutter, etc. Dist. No. 0. $50,000. MacGregor & Davis, 1108 Nicollet Ave., Minneapolis, engrs. CD 12/9/47.

About September 1

Kan., Olathe—Mission Valley Sewer Dist., c/o Payne & Brockway Engineers, engrs., Olathe, sewerage sys., appurtenances, etc., $50,000. CD 12/18/44.

September 2

Conn., West Haven—Town, 578 Campbell Ave., E. D. Appleton, first selectmen, West Haven, sewage disposal plant, treatment facilities, new equip., plant alterations. $340,000. Plans deposit $25, refundable. Metcalf & Eddy, 1300 Statler Bldg., Boston, Mass., engrs.

Minn., Cleveland—Village, C. C. Meyer, clk., Cleveland, primary treatment plant, approx. 7,440 lin. ft. 8 in. sanitary sewers, approx. 1,580 lin. ft. 4 in. house connections, with 24 manholes, Imhoff tank. $50,000. Plans deposit $15. A. M. Kircher, Mankato, engr.

September 6

Nev., Las Vegas—City, City Hall, seweage treatment plant. Approx. $50,000. Plans deposit $25. Ralph W. O'Neil, 302½ S. Brand Blvd., Glendale, Calif., engr. CD 5/31, under LB.

September 9

Ill., Princeton—City, City Hall, Sect. 5, sewage plant extens., imprvs., incl. equip. Stanley Eng. Co., Hershey Bldg., Muscatine, Ia., engr.

Wis., Milwaukee—Sewerage Comn. of City of Milwaukee, Jones Island, furnishing, driving approx. 9,500 wooden piles varying from 40 to 50 ft. long for sewage treatment plant extens. $240,000. Plans deposit $5. Jas. L. Ferebee, ch. engr. CD 7/15.

Bids Asked

Tex., Galveston—W. R. Reid, 4002 Timon Blvd., Corpus Christi, sanitary and storm sewer lines. $65,000.

LOW BIDDERS

Calif., Chula Vista—City, Aug. 9, installing approx. 61,587 ft. 8-to 15-in. vitr. clay sewers, from Charles J. Dorfman, 124 N. LaBrea Ave., Los Angeles, **$318,195,** Est. $316,320. CD 7/26.

Calif., Pomona—City, 205 W. 4 St., Aug. 9, municipal incinerator, from Morse Boulger Destructor Co., 205 E. 42 St., New York, N. Y. **$124,340.** CD 7/15.

PROJECTS COVERED

Projects—By Size

Construction projects here reported cover the United States and Canada, are of these minimum sizes or larger: water supply, earthwork, waterways $28,000; other public works $50,000; industrial buildings $68,000; other buildings $250,000.

Classes of Construction

(Name in order of Listing)

Water Supply
Sewers, Waste Disposal
Bridges
Streets & Roads
Earthwork, Waterways
Latin America
Public Buildings
Commercial Buildings
Industrial Buildings
Unclassified

Stages Reported

PROPOSED WORK: Including appointment of engineers or architects.

BIDS ASKED (new announcements only). For full calendar, see also preceding issues of ENR.;

LOW BIDDERS: On jobs below $500,000 value all low bidder news will be the final reports published on the projects involved except where award is not made to the low bidder. In this case, a supplementary contract award report will be published.

CONTRACTS AWARDED: Except awards to low bidders previously reported in low bidder stage.

Dates shown are of issue in which last previous report was published.

Symbols and Abbreviations Include:

✝ Federal Government
● Project of $1,000,000 or over.
ENR Engineering News-Record
CD Engineering News-Record Construction Daily

Calif., Selma—City, City Hall, rejected bids Aug. 1, sanitary sewage disposal plant, L.B. **$93,985.** New bids Aug. 15. CD 8/1, under LB.

Calif., Strathmore—Strathmore Public Utility Dist., Strathmore, Aug. 9, sewage disposal plant and collection sys. line, from Pipeline Constr. Co., Box 97, Bakersfield, concrete pipe, **$121,877;** from Alton B. Carter, Rt. 1, Box 773, Yuma, Ariz., vitr. clay pipe, **$123,326.** CD 7/19.

Ill., Chicago—Sanitary Dist. of Chicago, 910 S. Michigan St., Aug. 11, finishing concrete substructure and slabs in superstructure, removing exterior walls, structural steel framing, new brick walls, drainage, etc., West-Southwest Sewage Treament Plant, Stickney, from James McHugh & Sons, 6449 S. Park St., **$725,885.** CD 8/5.

●Ill., Chicago—Sanitary Dist. of Chicago, 910 S. Michigan St., rejected bids July 28, North Shore Intercepting Sewer, Contr. 8, in Winnetka and Glencoe, L. B. **$1,731,147.** CD 8/2, under LB.

Ind., South Bend—Bd. P. Wks., City Hall, Contr. 1, interceptor sewers, from Fattore Co., 6199 Eleven Mile Rd., Center Line, Mich., **$353,773;** Contr. 2, interceptor sewers, from A. Arcari, 15,100 Goddard Ave., Allen Park, Mich., **$638,232.** Est. $800,000. Bids 8/8. CD 9/14/45.

Ky., Louisville—Louisville & Jefferson Co., Mertopolitan Sewer Dist., 414 W. Jefferson St., Aug. 9, Wyandotte Subdivision Sewers, Contr. 82, and Dale Ave. Sewer, Contr. 83, from Henry Bickel Co., 1020 E. Chestnut St., **$63,950.**

Md., Baltimore—Mayor and City Council, City Hall, Aug. 10, drying units, pug mills and auxiliaries, Black River Sewage Treatment Works, Sanitary Contr. 351, from Combustion Eng. Superheater Co., 200 Madison Ave., New York, N. Y., **$189,750.** CD 7/27.

R. I., Howard—State, State Planning Bd., Industrial Trust Bldg., Providence, Aug. 10, sewage disposal plant, State Institutions, from C. L. Guild Constr. Co. Inc., 94 Water St., East Providence, **$197,377.** CD 3/17/48.

Tex., Corpus Christi—City, City Hall, Aug. 9, sanitary mains, appurtenances, Water St., Belden to Laguna Sts., from T. H. Lee, 307 Texas Theatre Bldg., San Antonio, **$112,913.** CD 7/26.

CONTRACTS AWARDED

Calif., Bakersfield—Mt. Vernon County Sanitation Dist., Courthouse, installing vitr. clay sanitary sewers in Annexation No. 4, to Pipe Line Constructors, Box 97, Bakersfield, **$92,621.** Bids 8/8. CD 11/23/45.

Calif., Colton—City, 150 E. I St., activated sludge treatment plant, to Mac Isaac & Menke, 3440 E. 22 St., Los Angeles, **$295,445.** Est. $375,000. Bids 8/9. CD 7/25.

Calif., Los Angeles—Los Angeles Co. Sanitation Dist. 15 1206 Maple Ave., 12,200 ft. 27 and 33 in. pipe Tyler Ave. Trunk Sect. 1, and 14,000 ft. 15- to 27-in. pipe, Tyler Ave. Trunk Sect. 2, to Artukovich Bros., Inc., 730 N. Atlantic St., Paramount, **$190,425** and **$124,669** respectively. Bids 8/10. CD 7/25.

N. Y., Amherst—Town, 5583 Main St., Zone 21, sanitary sewers North Bailey Meadows, to Lancaster Development Co., Lancaster, **$106,000.**

O., Cleveland—City, City Hall, Lakeside and E. 6 Sts., storm and sanitary sewers, W. 90 St. from Lorain to Almira, to Angelo Raguso, 20800 Halworth Rd., Shaker Heights, **$63,672.** Est. Approx. $50,000. Bids 8/4, awarded 8/9. CD 7/27.

Pa., Conneaut Lake—Municipal Auth. of Conneaut Lake, sanitary sewers, to Koski Constr. Co., Ashtabula, O., **$62,000.** Hill & Hill, North East, engrs. CD 7/8.

Tex., Houston—Hulen L. Downey, 606 McCarty St., sanitary sewers, Beaumont Rd., across from Sheldon Reservoir, to L. H. Harris, N. Blodgett St., **$61,100.**

BRIDGES

LOW BIDDERS

Delaware—State Hy. Dpt., Dover, Aug. 10. concrete, steel, deck structure 0.131 mi. Charles W. Cullen Bridge, Indian River Inlet F-113 (3), Contr. 1030, Sussex Co., from George & Lynch, Delaware Trust Bldg., Wilmington, **$759,913.** CD 7/26.

✝Montana—Bureau Pub. Roads, General Services Admin., 342 Post Office Bldg., Missoula, Aug. 11, bridge on West Gallatin Forest Hy. approx. 14 mi. south of Gallatin Gateway, Gallatin Co., from Flynn & Holland Co., Billings, **$127,531.**

CONTRACTS AWARDED

Arizona—State Hy. Dpt., Phoenix, rein.-con. overpass 41 mi. east of Flagstaff, Coconino Co., to H. J. Hagen, Globe, **$254,152.** Awarded 8/5.

Maine—State Hy. Dpt., Augusta, steel superstructure High Bridge, Rumford, to American Bridge Co., 1414 Statler Bldg. Boston, Mass., **$52,899.** Bids 8/10. CD 8/2.

Minnesota—State Hy. Dpt., St. Paul, Bridge 6591 over Elk River, S.P. 0503-09 (TH-23-23), Minn. Proj. F 234 (5), St. Cloud Co., to Megarry Bros., St. Cloud, **$51,418.** Bids 8/5. CD 7/26.

Massachusetts — Commonwealth of Massachusetts, Metropolitan Dist. Comr., 20 Somerset St., Boston, reconstructing roadway, Harvard Bridge, Contr. 615, Boston and Cambridge, to Marinucci Bros. & Co. Inc., 51 Ceylon St., Dorchester, **$533,084.** Bids 8/11, awarded 8/12. CD 7/28.

●**New Jersey**—Spencer Miller, Jr., comr. State Hy. Dpt., Trenton, constructing Contr. 3, for Island Heights-Seaside Heights Bridge incl. 3373 ft. spans and roadway approaches, Ocean Co., to Ole Hansen & Sons, Inc., Old Turnpike and Franklin Ave., Pleasantville, **$1,517,667.** Bids 8/11, awarded 8/11.

Tex., Dallas—Dallas Co., Courthouse, timber and concrete bridge, Precinct 2, Purchase and Hire. Approx. **$125,000.** CD 6/22.

Tex., Waxahachie — Ellis Co., c/o judge, Courthouse, bridge and drainage construction, Road Dist. 1, own forces. **$118,000.**

STREETS AND ROADS

BIDS ASKED

September 2

Tex., Canton—Van Zandt Co., Tom E. Johnson, judge, Canton, clearing, grubbing, grading, drainage structures, oil base and asph. surf. tr. 5.56 mi. Road 238, $75,000; 9.17 mi. Road 133 $120,000. French Eng. Co., Canton, engr. CD 4/8.

September 28

†**Michigan**—Bureau Pub. Roads, General Services Admin., City Hall, Iron River.

Iron Co.—constructing 5.423 mi. Michigan Forest Hy. Proj. No. 16-H, approx. 88,000 cu. yd. excav., 13,000 cu. yd. gravel surf. course. Plans deposit $10; adv. ENR 8/25.

Bids Asked

Tex., Galveston—W. R. Reid 4002 Timon Blvd., Corpus Christi, **street constr. and asph.** paving, **$60,000.**

LOW BIDDERS

†**Arkansas** — U. S. Eng., 300 Broadway, Little Rock, cancelled bids to have been opened Aug. 11, bit. surf. roads, Nimrod Reservoir, Fourche La Fave River, CIVENG-03-050-50-12.

California—State Div Hys., Sacramento, Aug. 10, c. conc. on cement treated subgrade 4.2 mi. between ¼ mi. west of Napa Co. line and Cordelia Underpass, Napa and Solano Counties, from Parish Bros., Box 6, Benicia, **$259,938;** plant mix on untreated rock surf., wid'n. concrete slab bridge 8.7 mi. between Los Banos and Pipe Line Rd., Merced Co., from Covina Constr. Co., Box 385, Covina, **$160,917.** CD 7/19.

Calif., Oakland—City, City Hall, Aug. 9, imprv. Park Blvd. and portions intersecting streets between Greenwood Ave. and El Centro Ave., from Gallagher & Burk, 900 73 Ave., Oakland, **$175,769.**

Calif., Sacramento—City, City Hall, imprv. streets in Fruitridge Oaks Unit 1, from A. Teichert & Son, Box 113, **$89,750.** CD 7/13.

Colorado—State Hy. Dpt., Denver, Aug. 9, grav. and oil processing 9.307 mi. State Hy. 1 between Larkspur and Monument, Colo. Proj. FI 002-2 (6) El Paso and Douglas Counties, from J. H. & N. M. Monaghan, Rte. 1, Derby, **$153,209.** Est. $160,749. CD 8/2.

Illinois—State Hy. Dpt., Springfield, Aug. 5, bit. resurf. 1949—11 S.B.I. Rt. 22, Dist. 10, Cook Co., from Rock Road Constr. Co. 5915 N Rodgers St., Chicago, **$73,579.** est. $61,000; Sect. 15 R.S., 105R.S. and 106 RS-1, Dist. 7, Marion Co., from E. J. Eiff Constr Co., Quincy, **$354,920.** est $370,000. CD 7/26.

Kansas—State Hy. Dpt. McPherson, Aug. 3, c. conc. 0.71 mi. Proj. 50N-59-U-331 (15) Part 2, McPherson Co., from M. W. Watson, National Bank of Topeka Bldg., Topeka, **$167,509.** CD 7/20.

Md., Baltimore—Mayor and City Council, City Hall, Aug. 10, sheet asph. resurf. streets, Contr. 999, from Arundel Constr. Co., Inc., 4420 E. Eager St., **$139,781.** CD 8/4.

†**N. M., Los Alamos**—U. S. Atomic Energy Comn., Los Alamos, Aug. 2, paving parking hard stands and streets, Inv. No. 291-40-2, from Raymond P. Avery & Son, Los Alamos, Items 1 to 44, **$139,925;** Items 1 to 48, **$138,425.**

O., Toledo—City, City Hall, Aug. 9, resurf. Delaware Ave., Parkwood Ave. and 13 St., from C. A. Schoen, Inc., 4033 Fitch St., **$79,993.** Est. $82,318. CD 8/4.

●**Pennsylvania**—Pennsylvania Turnpike Comn., 11 N. 4 St., Harrisburg, Aug. 10, grading, drainage, structures, paving 4.355 mi. Sect. 21-B-1, Philadelphia Extens. of the Turnpike from point approx. 512 ft. west of L. R. 507 in Silver Spring Twp., easterly for 22,934.18 ft. to point approx. 3,200 ft. east of L. R. 123, Cumberland Co., from Johnson, Drake & Piper, 86 Trinity Pl., New York, N. Y., **$2,621,857*****grading, drainage structures, paving 2.56 mi. Sec. 21B-2 Philadelphia Extens. of Turnpike from point approx. 3,200 ft. east of L. R. 123 in Upper Allen Twp. easterly for 13,520 ft. to point approx. 170 ft. west of the Yellow Breeches Creek in Lower Allen Twp., Cumberland Co., and grading, drainage structures, paving 2.826 mi. Sect. 22A-1, Philadelphia Extens. of the Turnpike from point approx. 170 ft. west of Yellow Breeches Creek in Lower Allen Twp., Cumberland Co., easterly for 14,926 ft. to point approx. 155 ft. west of L. R. 250, Fairview Twp., York Co., from Central Penna. Quarry Stripping Co., Hazelton, **$3,282,516.** CD 7/26.

†**South Dakota**—U. S. Eng., 1709 Jackson St., Omaha, Neb., cancelled bids to have been opened Aug. 12, paving maintenance at Pickstown, near Lake Andes, Inv. 27. Will re-advertise. CD 8/3.

Tex., Lakeview (Port Arthur P. O.)—City, E. Hudson, mayor, Port Arthur, Aug. 5, street paving 8 mi. incl. drainage work, 123,800 sq. yd. flexible base course, 78,000 lin. ft. concrete curb and gutters, from Farnsworth & Chambers, Inc., P. O. Box 74, Houston, **$188,187.** Est. $165,000. CD 7/27.

Wis., Milwaukee—City, July 29, grading, paving S. 31 St., from Schneider-Borchert Co., 606 W. Wisconsin Ave., Zone 3, **$69,973.**

†**Alaska** — Bureau Pub. Roads, General Services Admin., Juneau, Aug. 8, clearing, grubbing, grading, surf., construct bridge on 2.703 mi. Tongass Hy., Proj. 1-D6, E4, and clearing, grubbing, grading and bridge 1.5 mi. Proj. 1-BN G3 at Ketchikan, from Reed & Martin, Fairbanks, **$778,822.** CD 7/22.

British Columbia—Province of British Columbia, Parliament Bldgs., Victoria, Aug. 16, reconstructing 5.05 mi. Prince Rupert to Galloway Rapids section Northern Trans-Provincial Highway, from Wood, Parr & McClay Ltd., W. Pender St., Vancouver, **$278,563.** CD 7/7.

CONTRACTS AWARDED

Arizona—State Hy. Dpt., Phoenix, bit. 3 mi. Black Canyon roadway, Maricopa Co., to Orr & Orr Constr. Co., 320 W. Monte Vista Rd., Phoenix, **$54,608.** Bids 6/17, awarded 8/5.

Arizona—State Hy. Dpt., Phoenix, constructing 5½ mi. Clifton-Springerville Hy., Greenlee Co., to Orr & Orr Constr. Co., 320 W. Monte Vista Rd., Phoenix, **$188,763.** Bids 7/27, awarded 8/5. CD 7/20.

Arizona—State Hy. Dpt., Phoenix, reconstructing 2⅔ mi. Tucson-Nogales Hy., north of Nogales, Santa Cruz Co., to Sam Xavier Sand & Rock Co., Tucson, **$143,892.** Bids 7/28, awarded 8/5.

Arizona—State Hy. Dpt., Phoenix, 5¾ mi. roadway on either side of Big Sandy Bridge site, to Daley Constr. Acme Materials, 2500 S. 16 St., Phoenix, **$108,197.** Bids 8/5, awarded 8/5.

Calif., Hanford—City, City Hall, imprv. various streets, to Valley Paving & Constr. Co., Inc., Box 6, Pismo Beach, **$63,368.** Walter Hopkins, City Hall, city engr.

Kan., Russell—City, paving, to Burt & Binford, 5107 W. 2 St., Hutchinson, **$84,212.**

La., New Orleans—New Orleans Purch. Div., City Hall, black top surf. and resurf. Proposal No. 11014 and asph. Proposal 11030, to Texas Bitulithic Co., Burma Rd., **$97,351*****asph. Proposal 10999 and black topping Proposals 11013 and 11015, to L. Lang Bros. 2500 Poydras St., **$231,777*****subsurface drainage Proposals 10987, 10989, 10990, 11008, 11009, and c. conc. asph. Proposals 11018, 11032, to Boh Bros., 2400 Cypress St., **$197,544*****subsurface drainage, Proposals 10986, 10998 and 11009, to R. P. Farnsworth & Co., Inc., 1515 S. Salcedo St., **$80,093.** Grand total $606,765. Bids 6/20, awarded 7/1.

Minnesota—State Hy. Dpt., St. Paul, paving 3.3 mi. SP 6220-27 (TH 61-104) and S.P. 8205-15 (TH 61-3), U 307 (20), Moorhead Co. to Anderson & Sons, 100 N. 7 St., Minneapolis, **$282,963*****grading 8.9 mi. S.P. 7610-01 (TH 59-144), Moorhead Co., to Ose Bros., Thief River Falls, **$69,079*****grading, bridge 6.7 mi. S.P. 2508-11 (TH 56-116) and S.P. 2508-08 (TH 56-116), Moorhead Co., to Alley & Enebak, Faribault, **$230,738*****gravel base, road mixed bit. surf. 10.6 mi. S.P. 8606-12 (TH 55-59) and S.P. 8607-22 (TH 55-188), Moorhead Co., to J. Roth Constr. Co., St. Francis Hotel, St. Paul, **$102,506*****plant mixed bit. surf. 18.5 mi. S.P. 8609-12 (TH 152-129), S.P. 8605-08 (TH 25-25) and S.P. 7104-01 (TH 25-25), Moorhead Co., to Megarry Bros., St. Cloud, **$112,456*****paving 0.6 mi. S.P. 8407-06 (TH 75-6), Breckinridge Co., to Nelson, Mullen & Webster, 355 Gateway Bldg., Minneapolis, **$67,456*****grav. base, road mixed bit. surf. 5.24 mi. S.P. 1911-04 (TH 56-116), Moorhead Co., to McCree & Co., 918 New York Bldg., St. Paul, **$53,822.** Grand total $919,020. Bids 8/5. CD 7/21.

Minn., Austin—City, J. H. Weiland, clk., Austin, c. conc. paving, curbing 12 blocks, to Woodrich Constr. Co., Lumber Exchange Bldg., Minneapolis, **$79,215.** Bids 7/22. CD 7/13.

Minn., Pipestone—City, H. Gilmore, clk., b. conc. surf. for wid'n. 2 streets, construct approx. 8,550 ft. curb and gutter, etc., to Duininck Bros. & Gilchrist, Olivia, **$69,595.** Bids 8/4. CD 7/27.

New York—Bureau Contracts & Accounts, Alfred E. Smith Memorial Office Bldg., Albany, b. conc. 5.16 mi. extens. Route 11-B from Bangor to Malone, Franklin Co., to Torrington Constr. Co. Inc., Torrington, Conn., **$516,738.** Bids 6/8. CD 6/10, under LB.

●**Pennsylvania**—Pennsylvania Turnpike Comn., 11 N. 4 St., Harrisburg, grading, drainage, structures, paving 4.74 mi. Turnpike Sect. B-1, Tredyffrin, East Whiteland and Charlestown Twps., Chester Co. and grading, drainage, structures, paving 2.99 mi. Sec. 28B-2 Tredyffrin Twp., Chester and Montgomery Counties, to L. G. DeFelice & Son, Inc., Nettleton Ave., North Haven, Conn., **$4,689,418.** Bids 7/22, awarded 7/25, under LB.

●**Pennsylvania** — Pennsylvania Turnpike Comn., 11 N. 4 St., Harrisburg, grading, drainage, structures, paving 3.78 mi. Sec. 25-C, East Cocalico and Brecknock Twps. and paving 4.75 mi. Sect. 26-A, Brecknock Twp., Lancaster Co., to C. W. Good, Inc., Lancaster, **$4,002,735.** Bids 7/29, awarded 8/10. CD 7/11.

●**Pennsylvania**—State Hy. Dpt., 506 N. Office Bldg., Harrisburg, c. conc. pavement incl. 10 rein.-con. structures, exten. 2 concrete structures; one I-beam bridge and bit. on crushed aggregate surf. 36,902 ft. L.R. 195 (6C) 229 (2A). T. R. U.S. 11 Rd. U.S. 15, Perry, Juniata and Snyder Counties, to James Julian, 405 S. Du Pont Rd., Elsmere, **$1,643,883.** Bids 8/5. CD 8/10, under LB.

R. I., Providence—City, Dennis J. Roberts, mayor, City Hall bit. macad. various streets, reconstructing various streets, to M. A. Gammino Constr. Co., 728 Valley St., **$126,135.** Bids 8/2. CD 3/1.

Tex., Dallas—Dallas Co., Courthouse, addnl. road reconstruction, surf., Precinct 1, Approx. **$115,000;** road reconstruction, surf., drainage, Precinct 2, **$145,000;** addnl. road reconstruction, drainage, surf., Approx. **$90,000,** Purchase and Hire. Grand total Approx. $350,000. CD 6/22.

Tex., Groveton—Trinity Co., Courthouse, farm-to-market road, east, out of Lovelady, force account. **$109,000.** CD 5/9.

Tex., Houston—Hulen L. Downey, 606 McCarty St., street construction and asph. paving, Beaumont Rd. across from Sheldon Reservoir, to L. H. Harris, N. Blodgett St., **$56,125.**

Tex., Waxahachie—Ellis Co., c/o judge, Courthouse, addnl. road imprv. and surf. 16 mi. Road Dist. 1, own forces. Approx. **$140,000.** CD 10/27/48.

EARTHWORK, WATERWAYS

BIDS ASKED

August 30

†**Ill., Chicago**—U. S. Eng., 520 Merchandise Mart, Zone 54, repairing approx. 1,250 lin. ft. Shore Arm Exten. Exterior Breakwater, Chicago Harbor, incl. removal and disposal cribbing, decking lumber, Serial No. Eng-11-032-50-2. CD 8/4.

September 1

†**Illinois**—U. S. Eng., 826 U. S. Courthouse & Customhouse, St. Louis 1, Mo., levee construction, along east bank Mississippi River, vicinity East St. Louis, Mississippi River mile 179.2 to 179.9 above mouth of Ohio River East Side Levee and Sanitary Dist., St. Clair Co., Invitation NO. CIVENG-23-065-50-10. Extended date. CD 7/26.

September 2

†**California** — Bureau of Reclamation, Dpt. Interior, Chico, enlargement Canal 30 siphon, Station 47 plus 24 to 49 plus 90.6, Orland, Spec. R2-48-A (Region 2). L. N. McClellan, Bldg. 1-A, Denver Federal Center, Denver, Colo., ch. engr.

September 8

†**Louisiana**—U. S. Eng., foot Prytania St., New Orleans, Zone 9, fabricating, installing sector gates for Calcasieu Lock, near intersection of Calcasieu River, and Intracoastal Waterway at about Mile 238 of waterway about 10 mi. southeast of Lake Charles, Calcasieu Parish, Serial No. CIVENG 16-047-50-36.

†**Michigan**—U. S. Eng., 428 Federal Bldg., Milwaukee 1, Wis., repairing rubble mound shore connection Petoskey Harbour, Serial No. CIVENG 47-013-50-5.

†**Mississippi and Arkansas**—U. S. Eng., P. O. Box 60, Vicksburg, Miss., restoring approx. 2,100 stations levee and dikes and approx. 15,000 cu. yd. levee repair on east and west banks Mississippi River, Inv. No. CIVENG-22-052-50-30.

†**Oregon**—U. S. Eng., 19 E. Poplar St., Walla Walla, Wash., mfg., del. tainter valve operating machinery for McNary Dam Navigation Lock, Serial No. CIVENG-45-164-50-17.

September 9

†**Nebraska**—Bureau Reclamation, Dpt. Interior, Indianola, earthwork and structures for Cambridge lateral sys., laterals 2.3 to 10.6 and sublaterals, Frenchman-Cambridge Div., Missouri River Basin Proj., approx. 4 mi. west of Holbrook to Arapahoe, Spec. 2764; adv. ENR 8/25.

Bids Asked

†**Oklahoma**—U. S. Eng., Box 61, Tulsa, clearing reservoir, on Caney River, Inv. No. CIVENG-34-066-50-11. $125,000. CD 8/31/44.

LOW BIDDERS

†**Iowa, Missouri and Nebraska**—U. S. Eng., 1709 Jackson St., Omaha, 2, Neb., Aug. 11, dikes and revetment along Missouri River, Frazers-Lower Brownville Bends, Fremont Co., Ia., Atchison Co., Mo. and Otoe and Nemaha Counties, Neb., near Hamburg, Ia., Serial No. CIVENG-250-66-50-4, from Cunningham-Kiewit

Co., Omaha National Bank Bldg., Omaha, Neb., **$457,723.** CD 7/28.

†Louisiana—U. S. Eng., foot Prytania St., New Orleans, Aug. 4, 930,000 cu. yd. semi-compacted levee embankment, South Bank Red River Levees, Serial No. Eng-16-047-50-2, from Ray S. Burt, Crystal Springs., Miss., **$320,000.** CD 7/27.

†Louisiana—U. S. Eng., foot of Pyrtania St., New Orleans, Aug. 9, approx. 1,650 lin. ft. pile dike and 1,500 lin. ft. triangular frame retards, right bank of Mississippi River, Morville, Serial No. Eng-16-47-50-6, from Patton-Tully Trans. Co., 1242 N. 2 St., Memphis, Tenn., **$277,875.** CD 7/26.

Mass., Winthrop—Commonwealth of Massachusetts, Metropolitan Dist. Comn., 20 Somerset St., Boston, Aug. 11, sea wall repairs, Winthrop Shore Reservation. Contr. 617, from F. E. Daddario Corp., 73 Tremont St., Boston, **$88,300.**

●†North Dakota—U. S. Eng., Fort Lincoln, Box 360, Bismarck, July 28, turbines and governors for Garrison Dam Proj., near Riverdale, Inv. 104, from Allis-Chalmers Mfg. Co., 1126 S 70 St., Milwaukee, Wis., **$3,050,700;** turbines, from Baldwin Locomotive Co., Chester Pike and Simpson Sts., Eddystone, Pa., **$2,663,455.** Bids 5/3 rejected. CD 6/1, under LB.

Tex., Beaumont—Jefferson County Drainage Dist. 6, Beaumont, Aug. 5, drainage, straightening of Hillebrandt Bayou and lining with concrete from 16 St. to T. & N. O. Ry., from Farnsworth & Chambers, Inc., P. O. Box 74, Houston, **$525,770.** Est. $450,000. CD 7/19.

CONTRACTS AWARDED

†Arkansas and Missouri—U. S. Eng., P. O. Box 97, Memphis, 1, Tenn., levees, enlargement and roadway embankment, 540,000 cu. yd. Stations 10/ON-3-ON, Item R-891, New Madrid, Mo., to H. N. Rodgers & Sons Co., 62 S. Front St., Memphis Tenn., **$126,360;** riverside enlargement and roadway embankment 620,000 cu. yd. Station 47/27-52/49, Ferguson, Ark., to Driver Contg. Co., 406 Cotton Exchange Bldg., Memphis, Tenn., **$152,520,** both Serial No. Eng-401-41-49-165. CD 6/29.

La., Crowley—Acadia Parish Police Jury, drainage canals, incl. 946,000 cu. yd. to J. Ray, McDermott, Harvey, **$136,224.** Bids 8/9, awarded 8/9. CD 7/27.

Tex., Goliad—Bob Ramsey, Sr., Goliad, irrigation, 10 mi. southwest, Purchase and Hire, Approx. **$30,000.**

AIRPORTS AND AIRBASES

BIDS ASKED

August 30

Kan., Hutchinson — ADMINISTRATION BLDG., etc.—City, administration bldg., $100,000; airport imprvs., $75,000. McCrackin & Hiatt, Hutchinson, archts. A. R. Campbell, city engr. CD 7/15.

September 13

●Tex., Dallas — RUNWAY — City, City Hall, Main and Harwood Sts., exten. of north-south runway at Hensley Field. $1,000,000. CD 1/6.

LOW BIDDERS

●N. J., Newark—RUNWAY, etc.—The Port of New York Auth., 111 Eighth Ave., New York 11, N. Y., rejected bids June 30, furnishing, placing fill for runway, taxiways at Newark Airport, Contr. NA-14, C.A. **$7,209,600.** **(Correction—** status.) CD 7/6, under CA.

†N. M., Alamogordo—HOUSING—U. S. Eng., P. O. Box 1538, Albuquerque, rejected bids June 2, 50 single type family quarters, Holloman Air Force Base Proj., Serial No. Eng-29-005-49-90. L. B. **$503,210.** **(Correction**—no contract signed by contractor). Will re-advertise. CD 8/4, under CA.

S. C., Greenwood—TERMINAL—Greenwood County Airport Comn., Greenwood, cancelled bids to have been opened Aug. 10, terminal bldg., CAA Proj. No. 9-38-008-9. CD 8/2.

†Va., Quantico—SURFACING, etc.—Yards & Docks Annex, Navy Dpt., Arlington, Va., Aug. 10, 66,600 sq. yd. bit. surf. over existing concrete and bit. runway, etc. at Marine Corps Air Station, Spec. 22633, from American Asphalt Products Co., 60 P St. S.E., Wash., D. C., **$192,000.** CD 8/3.

CONTRACTS AWARDED

Minn., Minneapolis — AIRPORT—Metropolitan Airports Comn., 2429 University Ave., St. Paul, grading runway at Wold-Chamberlain Field, to D. Borre Constr. Co., 841 Sherwood Ave., St. Paul, **$735,254.** Bids 5/12. CD 5/25, under LB.

PUBLIC BUILDINGS

BIDS ASKED

August 29

Conn., Danbury—HOUSING—City, Danbury Housing Auth., George F. O'Brien, chn., 66 dwelling units 28 duplex houses, 10 single frame houses, water and sewer mains, Liberty Ave. $780,000. Plans deposit $50. Frank La Cava, 248 Main St., archt.

August 30

Va., Arlington—SCHOOL—Arlington Co. School Bd., 2732 Wilson Blvd., North Fairlington School, 30 and S. Abingdon Sts. Plans deposit $15. McLeod & Ferrara, 1830 Jefferson Pl. N. W. Wash., D. C., archts. CD 8/15.

Ont., Burks Falls — SCHOOL — High School Bd., S. O. Dukelow, secy., c/o Burks Falls, 1 story, 67x233 ft., masonry high school Approx. $250,000. Plans deposit $25. F. W. Warren, 7 Hughson St., S., Hamilton, archt. CD 8/8.

August 31

●Mass., Boston — HOUSING — City of Boston Housing Auth., 10 Post Office Square, 508 unit Cathedral Housing, South End, Harrison Ave., Malden, Mystic, E. Brookline Sts. $5,000,000. Plans deposit $100. Extended date. H. F. Kellogg, 84 State St., archt. Thomas Worcester, 84 State St., engr. CD 8/5.

September 1

†Florida—OFFICE, etc.—U. S. Eng., P. O. Box 1169, Mobile 7, Ala., field construction office and laboratory at Jim Woodruff Dam, near Chattahoochee, Serial No. CIVENG-01-076-50-2. Extended date. CD 8/10.

N. Y., Brooklyn—HEALTH SUBSTATION—Dpt. P. Wks., Municipal Bldg., New York, Zone 7, general contract, plumbing, heating and ventilating, electrical work and lighting fixtures for Brownsville Health Sub-station B. 1106-1122 E. 95 St. Plans deposit $25. CD 2/10/44.

N. Y., Oneida—HOSPITAL—Dpt. Hospitals, City Hall, hospital addn. $457,000. Harry A. & F. Curtis King, Herald Bldg., Syracuse, archts.

September 2

Conn., Fairfield — SCHOOL — Town, E. H. Staber, chn., Bldg., Comn., brick, steel school, 22 rooms, auditorium, gymnasium, library, science room, health room, etc., Mill Plain School, $700,000. Plans deposit $25. Lyons & Mather, 211 State St., Bridgeport, archts. CD 3/3/48.

Wis., Madison—SCHOOL—Bd. Educ., 351 W. Wilson St., 2 and 3 story, bsmnt., irregular Westmoreland Grade School. Plans deposit $25. Weiler & Strang, 114 N. Carroll St., engrs. and archts.

●Wis., Milwaukee—HOUSE OF CORRECTION—Milwaukee Co., Courthouse, 4 story, bsmnt., 68x400 ft. and 35x120 ft., rein.-con., brick, cut stone All House for House of Correction, $1,250,000. Plans deposit $10. J. Messmer, co. archt. M. B. Coifman, 1220 N. Milwaukee St., Zone 2, engr.

September 6

Calif., Oakland—SCHOOL—Bd. Educ., 1025 2 Ave., 9 classroom Burbank School Addn. $287,000. Plans deposit $25. Hudspeth & Cerruti, 427 13 St., archts. CD 3/10/48.

N. Y., Jamaica—HOSPITAL—Dpt. P. Wks., Municipal Bldg., New York, Zone 7, general constr.; plumbing; heating and ventilating; electrical for alterations and addns. on the south end of 9th floor and roof of main bldg. at Queens General Hospital, 164 St. and Goethals Ave., Queens Boro. Plans deposit $25. CD 3/13/47.

September 7

●Conn., Storrs—DORMITORIES—State, Raymony S. Thatcher, comptroller, State Capitol, Hartford, 7 dormitories for women, University of Connecticut, Proj. B/A-D-126, $2,500,000. Plans deposit $25. Frederic Teich, 252 Asylum St., Hartford, archt. CD 6/22.

Ind., Westville—DINING HALL, etc.—State of Indiana, P. Wks. & Supply Dpt., W. R. Mybeck, dir., 404 State House, Indianapolis, 1 story, bsmnt., brick, rein.-con. dining hall and kitchen at State Hospital, $250,000. Plans deposit $25. Boyd E. Phelps, 232 Franklin St., Michigan City, archts. and engrs.

O., North Jackson — SCHOOL — Bd. Educ., Jackson-Milton Local School Dist., Donald C. Shook, clk., North Jackson, North Jackson School addn. Plans deposit $25. Kling & Frost, 661 Wick Ave., Youngstown, archts.

September 8

N. C., Atlantic—SCHOOL—Carteret Co. Schools, H. L. Joslyn, supt., Beauford, 14 room school. Plans deposit $35. Allen J. Maxwell, Jr., Goldsboro, archt.

Tex., Houston — SCHOOL — Houston Independent School Dist., 1600 Washington St., 17 room masonry school, San Felipe-Post Oak Rd., $300,000. Stayton Nunn, 2425 Ralph St., co-ord. archt. Hooten & Turner, 2502 Robinhood St., engrs. CD 6/23/47.

September 9

Mass., Foxboro—REAR CENTER, DINING HALL—Commonwealth of Massachusetts, Dpt. Mental Health, 100 Nashua St., Boston, masonry, structural steel rear center and dining hall reconstruction, Contr. 2, P.M. 31. $756,000. Plans deposit $20. William G. Upham, 700 Washington St., Norwood, archt. CD 12/27/48.

September 12

Calif., Sausalito — SCHOOL — Sausalito School Dist., Sausalito, 14 classroom school, in North Sausalito, $350,000. Plans deposit $25. Masten & Hurd, 526 Powell St., San Francisco, archt. Carl W. Zollner, Box 315, Ross, engr. CD 6/2/48.

September 16

●Va., Charlottesville — DORMITORY — Supt. Grounds and Bldgs., University of Virginia, Charlottesville, dormitory. $2,800,000. Plans deposit $50. Eggers & Higgins, 542 Fifth Ave., New York, N. Y., and Baskerville & Son, 2313 W. Cary St., Richmond, archts.

Bids Asked

Mass., Beverly—HOUSING—City of Beverly Housing Auth., c/o E. F. O'Callahan, 222 Cabot

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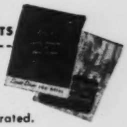

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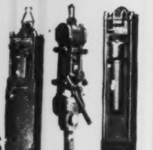

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St., veterans housing, Sawyer Rd. and Herrick St. $823,000. Plans deposit $100. R. Thibedeau, 81 Washington St., Salem, archt. CD 8/1.

N. Y., Port Washington—HOUSING—North Hempstead Housing Auth., Town Hall, Plandome Rd., Manhasset, 70 frame dwelling units, $750,000. William Lescaze, 211 E. 48 St., New York, archt. CD 2/2/48.

LOW BIDDERS

Conn., Westport—SCHOOL—Town, Wm. Vilas, chn. Bldg. Comn., Aug. 1, Green Farms School, from George Hickey, Inc., 13 Spring St., Stamford, **$517,890.** CD 7/8.

●**Ill., Chicago**—HOUSING—Chicago Housing Auth., 343 S. Dearborn St., Aug. 11, 136 dwelling units, multiple story apartment bldgs., relocation Proj. 4, Ogden Blvd., Fairfield and Talman Sts., from Welso Constr. Co., 2345 S. Pulaski Rd., **$1,272,430.** CD 7/20.

Mass., Belmont—HOUSING—Town of Belmont Housing Auth., Town Hall, Aug. 10, veterans housing between Thomas and Waverly Sts., from Paul Livoli, 920 Belmont St., Watertown, **$827,400.** CD 7/19.

Mass., Boston—HOUSING—Boston Housing Auth., 10 Post Office Square, Aug. 12, 48 unit veterans housing, Victory Rd. and Adams St., Dorchester, from John Bowen Co., 129 Newbury St., **$465 500.** CD 8/1.

Mass., Hyannis — SCHOOL — Town, Supt. Schools, Main St., Aug. 10, school, Bearse's Way, from J. L. Marshall & Sons, Inc., 560 York Ave., Pawtucket, **$579,950.** CD 7/21.

Mass., Newton—SCHOOL—City, School Dpt., City Hall, Aug. 11, Veterans Memorial Elementary school, Oak Hill Park, from Tornabene Bros. Co., 372 Langley Rd., Newton Centre, **$643,000.** CD 7/28.

●**N. Y., Dannemora** — ADMINISTRATION — Bureau Contracts & Accounts, Albany, Aug. 3, Cell Block H (Bldg. 33), for 525 inmates, incl. Administration Bldg. 4 addn. etc. from Mutual Constr. Corp. 205 E. 42 St. New York, **$1,593,450.** CD 7/26.

Pa., Warren—WOMEN'S—Dpt. Property & Supplies, 18 and Herr Sts., Harrisburg, Aug. 10, general contract, women's bldg. Units A, B, and C, at Warren State Hospital, from Navarro Corp., 6219-6221 Broad St., Pittsburgh, Zone 6, **$669,000.** Est. $500,000. CD 7/25.

Va., Lynchburg—SCHOOL—City, Aug. 1, Fairview School, from W. T. Jones Constr. Co., Lynchburg, **$586,388.** CD 5/16/45.

●**Va., Suffolk**—HOSPITAL—Louise Obici Memorial Hospital, Suffolk, Aug. 10, hospital, from Virginia Eng. Co., Newport News, **$1,822,000.** James Hannaford & Sons, 1024 Dixie Terminal, Cincinnati, O., consult. archts. Baskerville & Son, 2313 W. Cary St., Richmond, engrs.

CONTRACTS AWARDED

Calif., Long Beach—SCHOOL—City Bd. Educ., rein.-con. Hamilton Junior High School addn., to become Technical Institute, to W. C. Smith, Inc., 2119 Pacific Blvd., **$457,242.** Bids 8/4, awarded 8/10. CD 11/18.

●+**Ky., Louisville** — HOSPITAL — Veterans Admin., Vermont Ave. between H and I Sts. N.W., Wash. 25, D. C., general contract, general medical surgical hospital, Spec. 4910, to Vignia Eng. Co., Inc., Newport News, Va., **$6,990,000.** Bids 7/19. CD 7/28, under LB.

●**Mass., Lawrence** — HOUSING — City of Lawrence Housing Auth., John Sirois, exec. dir., 56 Melvin St., veterans housing, Osgood and Phillips Sts., to Davison Constr. Co., 1306 A. Elm St., Manchester, N. H., **$2,098,851.** Bids 6/3, awarded 8/12. CD 6/8, under LB.

Mass., North Cambridge—HOUSING—City of Cambridge Housing Auth., 1416 Mass. Ave., Cambridge, 66 unit veterans housing, Walden St., to G. L. Rugo & Sons, Inc., 80 Boylston St., Boston, **$717,000.** Bids 8/3. CD 7/19.

●**Mass., Watertown** — HOUSING — Town of Watertown, Housing Auth., Lexington St., to Calumet Constr. Co., 50 Calumet St., Roxbury **$1,120,236.** Bids 7/27, awarded 8/9. CD 8/4, under LB.

Mich., Detroit — SCHOOLS — Detroit Bd. Educ., 1354 Broadway, Jacques Marquette School to Thompson-Schmidt Co., 19363 James Couzens St., **$333,105.** James Gardner School, to H. B. Culbertson Co., 2842 W. Grand Blvd., **$347,130.** Awarded 8/10. CD 3/11/43.

N. Y., Flushing—GARAGE—Bd. Transportation, 250 Hudson St., New York, Zone 13, furnishing, installing electric equip. for Flushing Bus Garage, Roosevelt Ave. between 123 and 126 Sts., to Arc Electrical Co., 739 2 Ave., New York, Zone 16, **$299,400.** Bids 7/22. CD 7/5.

●**N. C., Burlington**—SCHOOL—The Burlington Administrative School, L. E. Spikes, supt., high school, to C. M. Guest & Sons, Greensboro, **$1,340,366.** Bids 8/3. CD 8/9, under LB.

O. Lyndhurst — SCHOOL — South Euclid-Lyndhurst Joint Bd. Educ., South Euclid, school, grading, storm and sanitary sewers and watermains in Lyndhurst between Gordon and Ford Rds., to Humel Constr. Co., 17706 Miles Ave., Cleveland, **$335,000.** Frank Eraskey & Assoc., 927 Rose Bldg., Cleveland, structural engrs. CD 11/26/48.

Pa., Ellwood City — PLANT — Chamber of Commerce, Ellwood City, approx. 90x120 ft., brick, tile, steel plant, to Ira C. Wilcox, 6415 Hamilton Ave., Pittsburgh, Approx. **$125,000.** Bowers & Barbalat, Bakewell Bldg., Pittsburgh, archts. Ellwood Knitting Mills, lessee.

Tex., Dallas—JUVENILE HEADQUARTERS —Dallas Co., c/o judge, Courthouse, juvenile headquarters bldg., to Vivrett & Vivrett, Southland Life Bldg. Annex, **$536,809.** Bids 6/27. CD 7/5, under LB.

Tex., Muenster—SCHOOLS—Muenster Independent School Dist., Muenster, 36,000 sq. ft., masonry, frame, elementary and high school, concrete slab fdn., to Jack Owens, Box 246, Lewisville, **$253,000.** Bids 8/6. Stanley Brown, 1905 N. Harwood St., Dallas, archt.

COMMERCIAL BUILDINGS

BIDS ASKED

August 30

Colo., Longmont — COMMUNITY—St. Vrain Memorial Bldg. Assoc., Inc., Longmont, 2 story, 125x200 ft. St. Vrain Community Bldg., 2500 seating auditorium, basketball floor, $280,000. Plans deposit $25. J. Roger Musick, 412 Colorado Bldg., Denver, archt. and engr. CD 6/10/48.

N. Y., Rye—OFFICE—Associated Reciprocal Exchanges of New York, 261 5 Ave., New York, general contract office. $400,000. W. Stuart Thompson & Phelps Barnum, 250 Park Ave., New York, archts.

August 31

●**Tex., Odessa**—HOTEL—Odessa Civic Hotel Corp., c/o Preston M. Cors, secy., Chamber of Commerce, Odessa, 7 story, bsmnt, brick, hollow tile, concrete hotel, pier and beam fdn., air-conditioning. $1,600,000. Walter W. Ahlschlager, 212 S. St. Paul St., Dallas, archt. CD 1/19.

September 3

Mo., St. Louis — HOSPITAL — Josephine Heitkamp Memorial Hospital, Sisters of Charity of Incarnate Word, 1640 S. Grand Blvd., Zone 4, 4 story, 45x150 ft. and 50x80 ft. L-shaped, brick, concrete, steel, hospital addn., Grand Blvd. and Lafayette Ave. Approx. $750,000. Extended date. Maguolo & Quick, 4908 Delmar Blvd., Zone 8, archts. CD 3/3.

September 7

Md., Cockeysville — INFIRMARY—Maryland Masonic Home A. F. & A. M. Masonic Temple, Baltimore, 5 story, 59x65 ft. brick, stone steel infirmary. Former bids rejected. Hall, Border & Donaldson, 2211 N. Charles St., Baltimore, archts. CD 5/13, under LB.

Mo., O'Fallon—CONVENT—St. Marys Institute, c/o Sisters of Precious Blood, O'Fallon, 3 story, bsmnt., 50x160 ft. and 40x126 ft. L-shaped rein.-con. brick convent addn. Approx. $400,000. Maguolo & Quick, 4908 Delmar Blvd., St. Louis, Zone 8, archts.

N. Y., Monticello—HOSPITAL—Monticello Hospital, Landfield Hill, hospital addn., alterations. $282,528. Abraham H. Okun, 163 Broadway, archt. CD 4/26/48.

September 8

Ga., Atlanta—RESEARCH—Georgia Institute of Technology, North Ave., research bldg. addns., alterations. Plans deposit $25. Bush-Brown, Gailey & Heffernan, 788 Cherry St. N. W., archts.

September 12

Tex., Bryan—CHURCH—College Ave. Baptist Church, Bryan, church. $275,000. Norton & Mayfield, 1505 S. College Ave., archts. Lockwood & Andrews, Union Natl. Bank Bldg., Houston, engrs. CD 5/31.

Bids Asked

●**Tex., Baytown**—SHOPPING CENTER—Leo F. Corrigan, Mercantile Bank Bldg., Dallas, shopping center. $5,500,000. D. P. Walling, & Harry B. Grogan, 7616 Tipps St., Houston, archts. CD 6/10.

SOON LETS CONTRACT

Ala., Dothan — CHURCH—Foster Street Methodist Church, c/o Pearson, Tittle & Narrows, archts., National Bank Bldg., Montgomery, soon lets contract church. $255,000.

Calif., Oakland—HOUSE OF STUDIES—St. Dominic's Priory, 2390 Bush St., San Francisco, soon lets contract 3 story, rein.-con. House of Studies (College of St. Albert the Great). $500,000. Arnold S. Constable, 85 Spencer Ave., Sausalito, archt.

Conn., Higganum — TELEPHONE EXCHANGE—Harold Davis, archt., 29 Whitney Ave., New Haven, soon lets contract 1 story, wing, brick, concrete telephone exchange bldg., dial equip., Maple Ave., for Southern New England Telephone Co., 227 Church St., New Haven $250,000. CD 7/11.

Me., Portland—HOSPITAL—Mercy Hospital, 144 State St., soon lets contract hospital wing and addn. $600,000. E.T.P. Graham, 171 Newbury St., Boston, Mass., archt. R. D. Kimball Co., 6 Beacon St., Boston, Mass., engr. CD 8/8.

Minn., Rochester—CHILDRENS HOME—St. Joseph's Orphanage, Rev. J. A. Mich, dir., Wabasha, soon lets contract 2 story, stone, tile backup, etc., childrens home. $250,000. Dreher & Ross, Mankato, archts.

●**N. Y., Poughkeepsie**—HOSPITAL—St. Francis Hospital, North Rd., soon lets general contract hospital addn. $1,600,000. Tuck & Eppel, 101 Park Ave., New York, N. Y., engrs. CD 5/20/48.

Pa., Phila.—BUILDING—Reynolds Metal Co. Inc., 1600 Arch St., soon lets contract building. Approx. $68,000. Bolton Martin & White, 266 S. 17 St.

Wis., Manitowoc—CHURCH, etc.—St. Andrew's Catholic Congregation, Manitowoc, soon lets contract 2 story, bsmnt., 92x188 ft., steel, brick, stone church and rectory, concrete fdn. and floors, Foeller, Schober, Berners, Safford & Jahn, 310 Pine St., Green Bay, archts.

LOW BIDDERS

Mass., Brockton — HOSPITAL — Brockton Hospital Co., A. S. Orr, pres., Center St., rejected bids July 14, hospital addns., alterations and boiler plant, Center St., L. B. **$871,240.** Will re-advertise. CD 7/19, under LB.

Mass., Leominster — THEATER — Leominster Recreational Assn., Inc., L. B. Kavanaugh, chn. Bldg. Comm., 75 Water St., Aug. 10, altering Rialto Theater, 55 Main St., from Farino Bros., Inc., 61 Bridge St., Newtonville, **$331,000.** CD 8/11.

CONTRACTS AWARDED

●**Ark., Little Rock**—HOMES—Fausett & Co., c/o Kenneth Lefener, archt., Gazette Bldg., 192 homes. Pine Forest Addn. Owner builds, approx **$1,000,000.** CD 8/9.

Ill., Brookfield—OFFICE, etc.—United Auto Workers No. 719, 8849 Ogden Ave., office and recreation center, to Stanley A. Nelson, 543 W. 79 St., Chicago, Zone 20, **$360,000.** CD 7/21.

Ill., Flossmoor—RESIDENCES—Hamilton Bros., 7060 S. Clyde St., Chicago, thirty-two 1 story, brick residences, to Boyd Constr. Co., 443 S. Ashland St., Chicago, approx. $25,000 to $30,000 each. U. H. **Koerner, 7501** Grove, Chicago, **archt.**

Ind., Gary—RESIDENCES—Ironwood Development, Inc., 2136 Rhode Island, 35 residences in Ironwood Subdivision, to Cline Constr. Co., 1300 Broadway, **$350,000.** Paul Cripe, 106 E. Market St., Indianapolis, archt. CD 6/30/47.

Ind., Indianapolis—HOUSING—S. E. Arvin & Sons, 593 W. Dr. Wdl. Pl., 50 houses. Owner builds. **$320,000.**

Md., Baltimore—RESIDENCES—Edmondale Building Co., 1831 Munsey Bldg., sixty 2 story brick residences, 4132-52 4147/51 Montwood Rd.; 4101-13 Stokes Dr.; 1301-07, 1300-10 Wildwood Parkway; 1101-17, 1201-15, 1301-23 Woodington Ave., near here. Owner builds. Approx. **$340,000.**

Minn., Mankato — CHURCH — Holy Rosary Parish, Rev. A. J. Schladweiler, North Mankato, church, to B. Neitge Constr. Co., Mankato, **$285,000.** CD 6/16.

Mo., Webster Groves (St. Louis, Zone 19 P. O.)—SANATORIUM—Glenwood Sanatorium, 1300 Grant Rd., Webster Groves, St. Louis Zone 19, 5 and 6 story, brick, concrete hospital, air-conditioning, separate contracts, **$850,000.**

●**Neb., Omaha**—APARTMENT—Carl C. Wilson, 918 City Natl. Bank Bldg., apartment dwelling development in Harrison Heights Addn. in vicinity of 40 and Center Sts., Owner builds. **$1,043,000.** L. J. Dworak, 651 J. E. George Blvd., archt. CD 5/20.

N. Y., Brooklyn — APARTMENT — Sam J. Lefrak, 97-50 Queens Blvd., Rego Park, 6 story apartment, 3502-32 Kings Hy. Owner builds. **$730,000.** CD 6/9.

●**N. Y., New York**—PAROCHIAL SCHOOL—Roman Catholic Church of St. Raymond, Tremont and Castle Hill Aves., Zone 61, 3 story parochial school, Tremont Ave. and Purdy St., to John H. Eisele Co., 18 E. 41 St., Approx. **$1,000,000.** CD 6/16.

O., Cleveland—APARTMENT—Herman Master, 2531 N. Moreland Ave., 3 story, bsmnt., 90x150 ft., 36 suite, brick apartment, E. 132 St. near Buckeye Ave., separate contracts. **$350,000.** Leavitt & Spieth, 1031 Schofield Blvd., archts.

O., Parma — HOMES — Atkins Constr. Co., 2099 Miramar Dr., South Euclid, 34, 1½ story 26x34 ft., bsmnt., frame homes, at various locations, separate contracts. **$374,000.**

O., South Euclid—HOMES—Albert Bauer, 3981 Colony Dr., thirty-two 1 and 1½ story, bsmnt., 26x32 ft., frame homes, 16 on Colony Dr., and 16 on Hensdale Rd., sperate contracts. **$340,000.**

O., Toledo—SCHOOL—Our Lady of Perpetual Help Parish, 3066 Broadway, school, 3537 Anthony Wayne Trail, to A. Bentley & Sons Co., 201 Belmont Ave., Approx. **$470,000.** Britsch & Munger, Nicholas Bldg., archts. CD 8/13/47.

Okla., Duncan — CHURCH — First Baptist Church, Duncan, church, to Chester M. Cowen, Duncan, **$250,000.** Awarded 7/25. Kenneth T. Price, Duncan, archt. CD 12/31/48.

Pa., Wilkinsburg — APARTMENT — Laketon Garden Apartments Corp., Laketon Rd., Pittsburgh, 3 story, bsmnt, 24x187 ft., brick, steel joist, concrete floor apartment, Laketon Rd., Penn. Twp., near here, separate contracts. **$250,000.**

S. C., Camden—APARTMENT—King Haigler Apartments, c/o contractor, apartment, to George A. Creed & Son, 1618 Sumter St., Columbia. Approx. **$300,000.**

Tex., Beaumont—HOUSING—J. & J. Constr. Co., Beaumont, housing. Owner builds. **$275,000.** CD 8/11.

Tex., Fort Worth—DWELLINGS—Oscar Seward III, Flatiron Bldg., 100 dwellings. Owner builds. **$325,000.** CD 7/30.

Tex., Houston — COMMERCIAL — Deutser Bros. & Abe Sampson, 2614 Wichita St., commercial bldg., sub-contracts. **$285,000.** CD 12/18/47.

Tex., Houston—RESIDENCES—Robert S. Durno, San Jacinto Natl. Bank Bldg., 20 residences. Owner builds. **$325,000.** CD 10/23/45.

Tex., Houston—DWELLINGS—F. D. Flanders, 13308 Telephone Rd., 36 dwellings, own forces. Approx. **$250,000.** CD 8/11.

Tex., Houston—DWELLINGS—F. D. Flanders, 13308 Telephone Rd., 36 dwellings, own forces. Approx. **$250,000.**

●**Tex., Houston**—DWELLINGS—Jim West Building Co., 1002 Hoffman St., 230 dwellings (start in fall) and 49 dwellings (immediate const.) in Pine Valley. Owner builds. Approx. **$1,380,000** and **$300,000** respectively. CD 8/11.

Tex., Kerrville — CHURCH — First Baptist Church Congregation, Kerrville, church, to J. G. Rossen, Box 849, Kerrville, **$251,000.** Awarded 8/6.

Tex., Lancaster — DWELLINGS — W. C. Davis, Sr., 4340 Maple St., Dallas, 48 dwellings, northwest sect. of city, own forces. **$425,000.** CD 3/31/48.

●**Va., Richmond**—OFFICE—Home Beneficial Life Insurance Co., 9 and Broad Sts., office, Fitzhugh Ave. between Lafayette St. and Kent Rd., to Doyle & Russell, Central Natl. Bank Bldg., **$1,150,845.** Charles S. Leopold, 213-15 S. Broad St., Phila., Pa., consult. engr. CD 7/21.

Wash., Seattle—SCHOOL—Blessed Sacrament Church, 5041 9 Ave. N. E., school, to Henrick Valle Co., 407 3 Ave. W., Approx. **$350,000.** Naramore, Bain, Brady & Johanson, Dexter Horton Bldg., Zone 4, archts.

Wis., Monroe—HOSPITAL—Sisters of St. Agnes Fond du Lac, St. Clare Hospital addns., incl. 5 story 45x145 ft. north wing; 1 story, 42x44 ft. chapel, 4 floors 25x44 ft. addn. between bldgs., 1 story, 28x66 ft. laundry addn., 1 story, 18x74 ft. kitchen addn., all rein.-con., steel, brick, stone, to Hutter Constr. Co., 134 Western Ave., Fond du Lac. Theodore Hartman, 17 2½ 11 St., Monroe, archt.

Alta., Edmonton — HOUSING — Prudham Constr. Co. Ltd., Edmonton, 54 dwellings, King Edward Park. Owner builds. **$350,000.**

Que., Montreal—OFFICE—Asselin Thompson Ltd., 4444 W. Sherbrooke St., 2 story, bsmnt., 80x180 ft. and 45x50 ft. rein.-con., steel, brick office, to A. F. Byers Constr. Co. Ltd., 5675 Western Ave. Approx. **$290,000.** Wood & Langston, 4444 W. Sherbrooke St., archts.

INDUSTRIAL BUILDINGS

BIDS ASKED

August 31

Minn., Melrose—GARAGE, etc.—Stearns Cooperative Electric Assn., A. Holmgren, Melrose, 1 story, structural and reinforced steel, brick garage and office. $100,000. Plans deposit $15. Long & Thorshov, 400 Metropolitan Life Bldg., Minneapolis, archts. R. D. Thomas & Assoc., 400 Metropolitan Life Bldg., Minneapolis, engrs.

September 1

Miss., Biloxi — BUS TERMINAL—Teche Greyhound Lines, c/o Diboll-Kessells & Assoc., archts., Baronne Bldg., New Orleans, La., bus terminal. Approx. $68,000.

S. C., Marion—WAREHOUSE, etc.—Marion Electric Co-operative, Marion, warehouse and office. Plans deposit $25. Holloway, Weber & Reeves, 1916½ Hillsboro St., Raleigh, N. C., archts.

Bids Asked

Conn., Hartford—WAREHOUSE—Standard Paper Co., 302 Market St. (selected list bidders) 1 story, brick, steel, rein.-con. warehouse, Flower St. $68,000. Robert W. Loomis, 32 Maple Ave., Windsor, structural engr.

●**Tex., Chesterville** — REFINERY — Del Ray Petroleum Co., N. Esperson Bldg., Houston, gasoline refinery. $1,000,000.

Tex., Ganado — GENERATING PLANT—South Texas Generating Co-operative, Victoria, gas turbine generating plant. $790,000. CD 4/21.

Tex., Port Arthur—WAREHOUSE—Co-operative Associated Grocery Stores, c/o A. Plettman, pres., Port Arthur, warehouse. $250,000. L. M. Muirhead, 3560 Magnolia St., Beaumont, engr. CD 3/17.

Tex., Port Mansfield (near Raymondville)—WAREHOUSE—Pure Oil Co., Goodhue Bldg., Beaumont, warehouse. $100,000. CD 8/12.

Wis., Milwaukee—WAREHOUSE—American Plumbing Supply Co., 1501 N. 3 St., Zone 12, 2 story, bsmnt., 50x140 ft., rein.-con. brick, warehouse, R. A. Sutherland, 264 E. Wells St., Zone 2, archt.

SOON LETS CONTRACT

Tex., San Antonio — STORAGE, SHOP—R. H. Fisher, 304 Brooklyn St., soon lets contract 2 story, 20,000 sq. ft., masonry, furniture storage and repair shop, concrete slab fdn. $75,000 E. Alexander, 607 Evans St., engr.

Wash., Seattle —BUILDING— Continental Baking Co., 18 Ave. S. and Jackson St., soon lets contract 1 story, 108x160 ft. rein.con. addn. approx. $68,000. Wm. Aitken, 408 Marion St., Zone 4, archt.

LOW BIDDERS

Calif., Emeryville—PLANT, etc.—Zellerbach Paper Co., 534 Battery St., San Francisco, distributing plant and office, from H. J. Christensen & W. E. Lyons Constr. Co., 3454 Harlam St., Oakland, **$117,188.**

Minn., Milaca—POWER—Rural Co-operative Power Assn., O. N. Gravgaard, pres., Milaca, Aug. 4, power bldg., to house diesel plant, from Kallestad Constr. Co., 4801 Lyndale Ave. S., Minneapolis. **$101,000.** R. D. Thomas & Assoc., 400 Metropolitan Life Bldg., Minneapolis, engrs. CD 2/3.

S. C., Gaffney—BOTTLING PLANT—Coca Cola Bottling Co., Gaffney, Aug. 8, bottling plant, from W. M. Fine, Spartanburg. **$119,795.** CD 7/25.

Tex., Amarillo—PLANT—Globe News Publishing Co., Inc., Gene Howe, Amarillo, Aug. 9, masonry newspaper plant, concrete slab and beam fdn., from Walter Wirtz, Amarillo, **$519,521.** CD 7/19.

Tex., Amarillo—SHOP, etc.—Plains Chevrolet Co., Amarillo, Aug. 8, 1 story 30,000 sq. ft. concrete, structural iron frame, auto shop, sales, service, concrete slab fnd., from Walter E. Wirtz, Amarillo, **$144,483.** Est. $140,000. CD 8/3.

Tex., Tyler—AUTO PARKING—Fair Foundation, c/o R. W. Fair, trustee, Tyler, rejected bids Aug. 2, 2½ story, 120x140 ft. masonry, concrete, steel auto parking, concrete pier and beam fdn. for 5 story. L. B. **$236,000.** Will readvertise. CD 7/27.

Va., Surry—SALES and SERVICE—H. C. Motor Co., Surry, auto sales and service bldg., from S. S. Kea, Ivor, **$107,700.**

CONTRACTS AWARDED

Ark., Jonesboro — MILL — Craighead-Rice Milling Co., Jonesboro, mill addn. Owner builds. **$90,000.**

Calif., Los Angeles—FILM EXCHANGE—Twentieth Century Fox Film Corp., 2019 S. Vermont Ave., 1 and part 2 story, 75x131 ft. reinforced brick, concrete film exchange bldg., to Weymouth Crowell, 2906 Marsh Ave., **$220,000.** Albert C. Martin & Assoc., 333 S. Beaudry Ct., archts.

Conn., Bridgeport—GARAGE—Joseph Lombard et al. 276 De Kalb Ave., 1 story, 90x140 ft. truck storage maintenance terminal garage, to Harry Maring, Jr., Inc., 356 Lindley St., Approx. **$68,000.** H. Morton, 164 State St., archt.

Fla., Tallahassee—SALES and SERVICE—Alford Chevrolet Co., c/o E. M. Watkins & Co., engrs. P. O. Box 997, auto sales and service bldg., to A. C. Samford, Inc., Albany, Approx. **$75,000.** CD 8/5.

Ill., Chicago—PLANT—Fillce & Caporale Dairy Products, Inc., 9600 S. Torrence St., Zone 17, 1 story, 125x200 ft., steel, concrete, brick milk processing plant, to Olivieri Bros., 10016 Ave., Zone 17, **$135,000.** Philip A. Faro, 3029 E. 92 St., Zone 17, archt.

Ill., Chicago — FOUNDRY—Hansell-Elcock Co., 3153 S. California St., Zone 23, 40,000 sq. ft. structural steel, brick core assembly foundry addn., to Carroll Constr. Co., 333 N. Michigan St., Zone 1, **$300,000.** Awarded 8/3. Alfred Benesch, 30 E. Adams St., Zone 3, archt.

Ind., Speedway—PUMPING STATION, etc. —Buckeye Pipe Line Co., 30 Broad St., New York, N. Y., 1 story, 40x80 ft. and 20x20 ft. brick, rein.-con., steel pumping station and boiler house, to Austin Co., 16112 Euclid Ave., Cleveland, Approx. **$94,000.** Awarded 8/3. E. W. Hollister, 16112 Euclid Ave., Cleveland, O., engr.

Kan., Wichita—GARAGE—D. R. Lauck Oil Co., 4 National Bank, commercial garage, to Hahner & Foreman, 121 N. Waco St., **$225,000.** Overend & Boucher, Wichita, archt.

O., Cleveland — WAREHOUSE, etc.—Lake Erie Co-operative Grocers, 5515 Hough Ave., warehouse, office bldg., railroad siding at W. 150 St. at N. Y. C. R. R. to Sam W. Emerson Co., 1836 Euclid Ave., **$225,000.** Bids 7/26, awarded 8/8. CD 7/27.

Pa., Erie—WAREHOUSE—Erie Brewing Co., 2131 State St., brick, concrete block, steel warehouse, 2131 State St., to E. E. Auston & Son, 20 and Reed Sts., **$172,650.** Bids 8/8. CD 8/5.

Pa., McKeesport — SINTERING PLANT — National Tube Co., Frick Bldg., Pittsburgh, 4 story, 129x168 ft., steel sintering plant, National Works, separate contracts. **$500,000.** Thomas Russell, c/o owner, engr.

R. I., Providence—PLANT—Sam Kerchanbaum, 37 Chestnut St., Providence, 1 story, 90x98 ft. body and radiator works, repair facilities, tool room, Point and Chestnut Sts., to Joseph P. Flynn, 26 Customhouse St., Approx. **$68,000.** Harry Marshak, 15 Hewes St., archt.

Tex., Beaumont—POWER STATION—Gulf States Utilities Co., 362 Liberty St., design and construction steam power station expansion, to Stone & Webster Eng. Corp., M. Esperson Bldg., Houston, **$550,000.** CD 11/11/48.

Tex., Beaumont—SHOP—Jackson Motor Co., Beaumont, remodeling, expanding motor repair, service, sales shop, own forces. Approx. **$70,000.**

Tex., Dallas—SHOP Daniel Radiator Mfg. Co., 1006 Caroline St., Houston, radiator shop, in Trinity Industrial Dist., to Williams & Wagner Constr. Co., 8515 Preston Rd., **$93,300.**

Tex., Gainesville—PLANT—Southland Naval Stores Plant, Gainesville, reconstruct naval stores mfg. plant, own forces. **$75,000.**

Tex., Galveston—WAREHOUSE—Stanolind Oil & Gas Co., Gulf Bldg., Houston, warehouse, near here, own forces **$75,000.** CD 8/12/48.

Tex., Houston — SHOP—Houston Power & Equipment Co., 4600 Navigation Blvd., 1 story, 100x112 ft., tile, stucco power and equip. shop bldg., concrete slab fdn., to L. F. Meadows, 4800 Harrisburg St., **$75,000.** Est. $65,000. Awarded 8/10. Ernest L. Shult, 5009 Fannin St., engr.

Tex., Houston—PLANT—Lone Star Bag & Bagging Co., Calhoun & Dumble Sts., bagging plant mfg. addn., own forces. Approx. **$75,000.** CD 1/15/48.

Tex., Houston—PLANT—Southwestern Sugar & Molasses Co., Manchester St., molasses plant unit, own forces. Approx. **$120,000.**

Tex., Houston—PLANT—Standard Rendering Co., 3701 Schalker St., rendering plant expansion, own forces. **$145,000.**

Tex., Wichita Falls—WAREHOUSE—Blankenship Supply Co., Wichita Falls, 2 story, 94x150 ft. warehouse, to E. J. Simmons, Wichita Falls, Approx. **$98,000.** E. B. Dunn, Staley Bldg., archt.

Tex., Wichita Falls—STORAGE—Chickasha Cotton Oil Co., Wichita Falls, metal, concrete cottonseed storage, own forces. Approx. **$70,000.**

Tex., Wichita Falls—PLANT—Wichita Meat & Provision Co., Wichita Falls, meat plant unit, own forces. **$165,000.** CD 9/29/48.

Utah, American Fork—SERVICE—Utah Power & Light Co., Kearns Bldg., Salt Lake City, service bldg., to Ralph E. Child, Springville, **$88,300.** J. A. Hale, c/o owner, ch. engr.

Wash., Seattle — SHOP, etc. — Northwest Greyhound Lines, Inc., 8 Ave. and Stewart St., Zone 1, general contract 1 story, 50x161 ft service bldg. addn. to garage, 1 story, 52x184 ft. shop and 27x103 ft. parts bldg., to E. F. Shuck, 535 Pontius St., Seattle, Approx. **$300,000.** CD 5/25.

●**Wis., Cassville** — POWER PLANT, etc. — Dairyland Power Co-operative, John P. Madgett, genl. mgr., Rivoli Bldg., La Crosse, power plant structure, incl., 20,000 kw generator, turbine and boiler house, to F. H. McGraw Co., 48 E. Washington St., Chicago, 1, Ill., **$5,800,000.** Bids 7/21, CD 8/2, under LB.

Alta., Edmonton—PLANT—Trail Concrete Products, Edmonton, soap mfg. plant, 12554 71 st. Owner builds, **$100,000.**

Alta., Wetaskiwin —PLANT— Co-operative Seed Cleaners Ltd., Wetaskiwin, plant, to Speedy Constr. Co. Ltd., Wetaskiwin, Approx. **$70,000.** F. Parkinson, Dpt. Agriculture, Edmonton, engr.

Ont., Toronto—PLANT—Kendal Mills Division, Bauer & Black, 419 Coxwell Ave., general contract 1 story, 300x300 ft., brick, steel, concrete plant warehouse, office, to Milne & Nicholls, Ltd., 57 Bloor St., W., Approx. **$400,000.** Bids 7/8. CD 7/27.

Ont., Welland —WAREHOUSE— Brewers Warehouse Co. Ltd., 19 Richmond St. W., Toronto, 1 story, 70x200 ft., bsmnt., brick, steel warehouse, to Garner Constr. Co. Ltd., 7 Riverbank St., Approx. **$225,000.** Bids 8/9. CD 7/29.

Que., Quebec City—PLANT—David Pike & Co., Bingley near Bradford, England, textile plant, St. Sacrement Ave., to Francois Jobin Incorp., 88 St. Louis Rd. Approx. **$200,000.** L. Mainguy, 1045 Shaumont Ave., archts. Bids 7/11. CD 7/13.

UNCLASSIFIED

BIDS ASKED

August 29

British Columbia — PIPELINE — Prairie Farm Rehabilitation, Bd., engrs., 910 McCallum Hill Bldg., Regina, Sask., pipelines, etc. Westbank Irrigation Proj., for Government of Canada, Dpt. Agriculture, Hunter Bldg., Ottawa, Ont. Plans deposit $10.

August 30

Conn., New Haven—BATHING PAVILION—City Park Dpt., Pater Van Heininger, supt. Parks, 200 Orange St., 100x300 ft. brick, concrete bathing pavilion, Lighthouse Point, $300,000. Plans deposit $35. Extended date. Brown & Von Breen, Inc., 295 Sherman Ave., archt. CD 8/3.

Nebraska—RURAL DISTRIBUTION LINES —Custer Public Power Dist., Broken Bow, 130.1 mi. rural distr. lines, Custer, Logan, Lincoln and McPherson Counties; 27.1 mi. rural distr. lines, Lincoln and Logan Counties, Approx. $160,000. Raymond H. Reed & Co., Columbus, engrs. CD 5/16.

August 31

Pa., Phila.—SERVICE TUNNELS, etc.—Dpt. Property & Supplies, 18 and Herr Sts., Harrisburg, general constr. service and traffic tunnels and hot water generating stations, incl. piping and equip. of tunnels and stations, electrical constr. of tunnels and stations; sanitary sewers, South and Center Groups; West Colony, storm water sewers, North Group, West Colony; roads, walks, and inlets, North Group, West Colony, at Philadelphia (Byberry) State Hospital. Plans deposit $5 each. The Jack S. Steele Co., 1417 Sansom St., engr. CD 2/19/48.

September 1

†**Arizona and Nevada**—STRUCTURAL STEEL—Bureau Reclamation, Dpt. Interior, Bldg. 1-A, Denver Federal Center, Denver, Colo. furnishing, del. f.o.b. cars shipping point or f.o.b. cars Mesa and Coolidge, Ariz., fabricated structural steel for Mesa and Coolidge substations, Davis Dam Proj., Spec. 2766. L. N. McClellan, ch. engr.

September 6

†**N. C., Camp Lejeune (Br. New Bern)**—FACILITIES—Pub. Wks. Office, Camp Lejeune, misc. repairs and replacements defense housing, oil space heating facilities, revisions electrical installations, provisions of hot water and cooling facilities, paint work and paving at Marine Barracks, Spec. 22962. Plans deposit $15.

September 7

†**New Mexico**—CONVERTING GAS TO FUEL OIL AND ELECTRICITY—U. S. Eng., P. O. Box 1538, Albuquerque, converting from gas to fuel oil and electricity, Conchas Dam, Serial No. CIVENG-29-005-50-2. CD 8/9.

September 13

†**S. D., Weaver** — LIGHTING SYSTEM — U. S. Eng., 1709 Jackson St., Omaha, 2, Neb., hazard beacon lighting sys. at Rapid City Air Force Base, incl. rebuild about 2 mi. 3-phase 2400/2160-volt distr. line; constr. 10 mi. lighting sys. (approx 3 mi. underground and 7 mi. aerial) and installing lighting units, switches, regulators, appurtenances.

Bids Asked

●**Texas and Louisiana** — OIL PIPELINE — Mid-Valley Pipe Line Co., (Sun Oil Co.), 1608 Walnut St., Phila., Pa., and Standard Oil of Ohio, 3083 Broadway, Cleveland 16, O., Sect. 1, 116 mi. 20 in. crude oil pipeline between Longview Tex. to Haynesville, La., $3,650,000 (part of 1,000 mi. crude oil pipeline between Longview, Tex. and Lima, O.) CD 4/25.

SOON LETS CONTRACT

●**Wash., Seattle**—BLEACHERS—Catholic Diocese of Seattle, 907 Terry Ave., soon lets contract 45x364 ft. rein.-con., steel section, bleachers for athletic stadium. Total cost $1,000,000. J. W. Maloney, Central Bldg., Zone 4, archt. CD 8/12.

LOW BIDDERS

Conn., Bristol—SWIMMING POOL—City Bd. Park Dpt., Bristol, Aug. 3, swimming pool, bathing pavilion, DeWitt Page Memorial Page Park, from P. Allaire & Sons, Inc., 350 Riverside Ave., **$192,000.** CD 7/12.

Mass., Quincy—PARKING AREA—City, P. Wks. Dpt., City Hall, 61 Saville Row, Aug. 12, municipal parking area from Walter Reed Corp., 1078 Boylston St., Boston, **$125,091.** CD 8/8.

Minn., Rochester — TUNNEL — State Dpt. Admin., 19 State Capitol, St. Paul, Aug. 4, concrete tunnel at State Hospital, from Hagstrom Constr. Co., 1567 Selby Ave., St. Paul, **$165,750.** CD 7/20.

Minn., Rochester — GENERATING UNITS—State Dpt. Admin., State Capitol, St. Paul, Aug. 9, furnishing, installing at State Hospital, steam generating units, from W. Bros. Boiler & Mfg. Co., 1057 Tenth Ave. S. E., Minneapolis, **$161,980;** turbine generating units and surface condenser, etc., from Worthington Pump & Machinery Corp., 2428 University Ave., St. Paul, **$123,540.** CD 8/4.

Nebraska—RURAL DISTRIBUTION LINES —Consumers Pub. Power Dist., Columbus, rejected bids July 25, line constr. and reconstruction in vicinity of Milford and Exeter L. B. **$131,603.** CD 8/4, under LB.

North Dakota — RURAL DISTRIBUTION LINES—Tri-County Electric Co-operative, Carrington, Aug. 4, 236 mi. rural distr. lines, Foster Co., from Sorkness Constr. Co., Fargo, **$236,618.** CD 3/17.

†**Pennsylvania** — FILLING MINES — U. S. Eng., 925 New Federal Bldg., Pittsburgh, Zone 19, Aug. 10, filling abandoned mines, Station 1207 plus 50 to Station 1222 plus 20, relocation of Pennsylvania R. R., Conemaugh Div., CIVENG-36-058-50-5, from Severin Sekol & Son, 1402 Myrtle St., Scranton, **$124,672.** Est. $96,112. CD 7/25.

R. I., South Kingstown—UTILITIES—State, F. A. Adams, purch. agt., State House, Providence, Aug. 10, utilities and appurtenances extens., from Pacela Bros. Inc. & Barba Constr. Co., 1403 Main St., West Warwick, **$83,059.** CD 8/5.

Texas—RURAL DISTRIBUTION LINES—Comanche County Electric Co-operative, Inc., Comanche, Aug. 9, Sect. 2, 248 mi. rural distr. lines, Comanche, Callahan, Brown and Eastland Counties, from Sisco Electric Co., Conroe, **$250,669.** Est. $250,000. CD 7/20.

●**Texas**—DAMS—Lower Colorado River Auth., c/o Max Starcke, genl. mgr., P. O. Box 1153, Austin, Aug. 10, dams at Marble Falls and Granite Shoals, from Brown & Root, Inc., Box 3, Houston, **$2,853,059** and **$4,373,640** respectively. CD 8/1.

CONTRACTS AWARDED

Arkansas—POWER LINE—Arkansas Power & Light Co., Pine Bluff, 14.5 mi. 12 kv power line from Marie substation to Lepanto, Owner builds, **$50,000.** CD 5/22/47.

Ind., Clarksville—DRIVE-IN THEATRE—T. J. Atkins & G. G. Bowling, c/o T. J. Atkins, Clarksville, 550-car drive-in theatre incl. facilities for walk-in patrons, screen tower, projection booth, walks, terraced ramps, in-a-car speakers, etc., Clark Blvd., State Rt. 562, Owner builds, **$75,000.**

Kan., Atchison—DRIVE-IN THEATER—Beverly Miller & Assoc., Jefferson City Drive-In Theatre, Rt. 50, Jefferson City, Mo., 300-car drive-in motion picture theatre complete with screen tower, projection booth, walks, ramps, etc. on Rt. 9, two miles west of here, separate contracts. Approx. **$60,000.**

Mo., Winthrop — DRIVE-IN THEATRE — C. H. Martin, c/o Belt Drive-In Theatre, St. Joseph, Mo., 500 car drive-in theatre with screen tower, projection booth, concession stands, walks, ramps, etc. on 20 acre tract near city limits, separate contracts. Approx. **$60,000.**

North Dakota—RURAL DISTRIBUTION LINES—K. E. M. Electric Co-operative, Linton, 621 mi. rural distr. lines, Emons, Kidder, Logan and McIntosh Counties, to Zontelli Constr. Co., Ironton, Minn., **$596,281.** Bids 7/21. CD 6/30.

O., Toledo — TELEVISION TOWER — Ohio Bell Telephone Co., 121 Huron St., 3 story, brick, structural steel television tower atop telephone bldg., Huron St., to Watts Constr. Co., 1235 Miami St., Approx. **$110,000.** Bellman, Gillett & Richards, 518 Jefferson St., archts.

S. C., Rock Hill — RURAL DISTRIBUTION LINES—City, Rock Hill, rural distr. lines, to L. W. Routh Constr. Co., Greensboro, N. C., **$76,198.** Bids 8/5. B. O. Vannort Engineers, Inc., 218 W. 2 St., Charlotte, N. C., engr.

●**Texas, Louisiana and Mississiopi and Arkansas**—OIL PIPELINE—Mid-Valley Pipe Line Co., (Sun Oil Co.), 1608 Walnut St., Phila., Pa., and Standard Oil of Ohio, 3083 Broadway, Cleveland 16, O., to Latex Constr. Co., 2707 Ferndale St., Houston, Tex., Sect. 2. 41 mi. 12 in. crude oil pipeline between Delhi, La., and Mayersville, Miss., **$740,000;** Sect. 8. 120 mi. 20 in. crude oil pipeline from Haynesville, La. to Mayersville, Miss., Approx. **$4,800,000;** Sect. 9, 21 mi. 8 in. welded joint crude oil pipeline between Haynesville, La., to Magnolia, Ark., **$315,000;** laying two 20 in. crude oil pipelines under Mississippi River, near Mayersville, Miss., Approx. **$136,000*****to Associated Pipe Line Contractors, Inc., M & M Bldg., Houston, Tex., Sect. 3-A, 111 mi. 22 in. crude oil pipeline between Mayersville La., and Oakland, Miss., **$4,125,000** (all foregoing part of 1,000 mi. oil pipeline between Longview, Tex., and Lima, O.) Grand total Approx. $10,116,000. CD 4/25.

Texas—SPUR TRACK—Missouri, Kansas & Texas Ry. Co., K. H. Hanger, ch. engr., Katy Bldg., Dallas, Zone 2, addnl. 7 mi. spur track, near Whitney between Main line and Whitney Dam Proj. own forces. Approx. **$90,000.**

Tex., Bedford (Dallas P. O.)—CAMP—Variety Foundation of Texas, Variety Club Boys Ranch, Adolphus Hotel, Dallas, playgrounds and camp, incl. utilities, own forces. **$80,000.** Jack Corgan, 2008 Jackson St., Dallas, engr.

Tex., Dallas—TRACKS—Dallas Railway & Terminal Co., Interurban Bldg., rebuilding tracks and paving in track area, force account. **$86,800.**

Tex., Dallas—GAS MAIN—Lone Star Gas Co., 1915 Wood St., 16 in. gas main in David St. Owner builds. **$60,423.**

Tex., Galveston—WHARF—Stanolind Oil & Gas Co., Gulf Bldg., Houston, wharf construction, lines for oil, water, and sewers in area, near here, to N. A. Smith Constr. Co., S. Main St., Houston, **$130,000.**

Tex., Houston—GOLF COURSE, etc.—Paul Drummet, Greens Rd., 18 hole golf course, subcontracts, **$96,000;** concrete outdoor swimming pool, Purchase and Hire, **$68,000.** Robert Irvine & K. C. Clarke, 2405 San Jacinto St., proj archts.

Tex., Port Mansfield—DOCKS—Pure Oil Co., Goodhue Bldg., Beaumont, docks near Raymondville, own forces. Approx. **$75,000.**

●**British Columbia** — RIGHT-OF-WAY CLEARING—Pacific Great Eastern Ry., Parliament Bldgs., Victoria, clearing, grading 16 mi. section for exten to Pacific Great Eastern Ry., to Campbell-Bennett Ltd., 1718 W. 5 Ave., Vancouver, **$1,119,694.** Bids 8/8. CD 8/1.

PROPOSED PROJECTS

WATER SUPPLY

Calif., Truckee — Truckee Public Utility Dist., Truckee, watermains, **$150,000.** Keith Kingman & L. Cedric Macabee, 156 University Ave., Palo Alto, consult. engrs.

Colo., Monte Vista—City, c/o Charles H. Akers, mayor, voted bonds, municipal water plant, **$400,000.**

Fla., New Smyrna — City, water plant imprvs., incl. 3 water softening units and pumps, pump house, **$600,000.** Russell & Axon, Dayton Beach, consult. engrs. George Marsh, New Smyrna, engr. CD 8/6/48.

La., Jonesboro—Town, Town Hall, defeated bonds, WW. imprvs **$134,500.** CD 6/27.

N. M., Ruidoso—City, c/o mayor, plans by Ashley G. Glassen & Assoc., engrs. and archts., 504 N. Kansas St., El Paso, Tex., WW sys., incl. wells, reservoirs, pump. station, distr. sys., etc. **$355,000.**

N. C., Southern Pines — Town, bond election Sept. 3, WW imprvs. **$275,000.** L. E. Wooten & Co., Capital Club Bldg., Raleigh, consult. engrs. (**Correction**—bond election date.) CD 8/1.

Okla., Britton — City, WW extens., well pumping equip. and reservoir. **$100,000.** Kenneth Kloffke, 2908 Classen Blvd., Oklahoma City, Zone 6, consult. engr. CD 2/28/45.

Ore., Portland — Rockwood Water Dist., 18230 S. E. Stark St., voted bonds, imprv. water sys. **$100,000.** C. E. Carter, Spalding Bldg., consult. engr. Leo Couey, city engr.

●**Tenn., Memphis**—Memphis Light, Gas & Water Comn., City Hall, pumping station for South Memphis, **$5,000,000.** Black & Veatch, 4706 Broadway, Kansas City, Mo., consult. engrs.

Tex., Corsicana — City, City Hall, water supply facilities. Approx. **$400,000.** T. C. Forrest, Jr., Praetorian Bldg., Dallas, consult. engr. CD 6/22.

Tex., Falfurrias — City, R. R. Scott, mayor, bond election Sept. 9, imprv. and expanding WW. **$100,000.** CD 7/28.

Tex., Galveston — University of Texas-Medical Branch, 816 Strand St., plans by Mark Lemmon Co., 1210½ Main St., Dallas, WW demineralizing unit, for power and domestic useage. **$350,000.** Freese, Nichols & Turner, National Standard Bldg., Houston, consult. engrs.

Tex., Gilmer—City, voted bonds July 29, water supply well, **$30,000;** elevated steel storage tank and 500,000 gal. concrete storage tank, **$100,000;** water distr. extens. **$60,000.** Royce E. Wisenbaker & Assoc., 1415 N. Dixie St., Tyler, consult. engrs.

Tex., Lubbock — City, 2½ m.g. elevated steel storage tank and tower. **$250,000.** G. K. Harris, city engr. CD 12/18/47.

Tex., Tyler — City, George Fairtrace, mgr., bond election Aug. 31, 6 m. gal. filtration plant, **$100,000;** distribution lines, **$175,000.** T. C. Forrest, Jr., Praetorian Bldg., Dallas, consult. engr.

Va., Norfolk—City, City Hall, filtration plant addn., Contr. 7; outside piping, filtration plant, Contr. 6. Whitman Requardt & Assoc., 1304 St. Paul St., Baltimore, designing engrs.

Alta., Lethbridge—Municipality, watermain extens. **$110,000.** J. Haines, city engr.

Que., Charlesbourg (Postal Dist. Quebec City)—Municipality, water sys. modernization, **$100,000.**

Que., Ste. Foye — City, J. Morin, secy., Ste. Foye, pumping station at La Suete reservoir, exten. present WW sys. Approx. **$880,000.** M Gilbert, 251 St. Joseph St., Quebec City, engr.

Sask., Saskatoon — Municipality, clearwater storage facilities, filtration plans addn., primary watermains, **$410,000.** CD 9/7/44.

SEWERS, WASTE DISPOSAL

●**Ala., Birmingham**—Bd. Comrs., Jefferson Co., Courthouse, complete sewerage sys. and treatment works, incl. earth and rock excav., sewer lines and manholes. **$12,000,000.** Polglaze & Basenberg, Empire Bldg., Birmingham, consult. assoc. engrs. and Alvord Burdick & Howson, 20 N. Wacker Dr., Chicago, Ill., engrs. CD 2/5/47.

●**Calif., San Lorenzo**—San Lorenzo Valley Sanitation Dist., San Lorenzo, trunk sewer. **$1,500,000.** L. Cedric Macabee, 156 University Ave., Palo Alto, consult. engr.

Mass., Northampton — Sewer Comrs., 15 City Hall, sewage treatment plant. Albert Goldberg, 739 Boylston St., Boston, engr. CD 3/13/44.

Mo., Sweet Springs — City, City Hall, voted $65,000 bonds Aug. 2, sewers, sewage plant, **$177,500.** W. B. Rollins & Co., 327 Railway Exchange Bldg., Kansas City, Mo., engrs. CD 10/9/46.

O., Ashtabula—City, sewage treatment plant. **$415,000.** CD 12/10/43.

O., Toledo — Comrs. Lucas Co., Courthouse, drainage imprv. Nebraska Ave. and Holland-Sylvania Rd., incl. major enclosed drainage ditch on both streets. **$112,770.** Melvin Rice, co. engr. Guy Neeper, ch. deputy co. engr. CD 11/18/43.

Okla., Britton—City, sewage disposal plant, outfall sewers. **$100,000.** Kenneth Kloffke, 2908 Classen Blvd., Oklahoma City, Zone 6, consult. engr.

Okla., Sallisaw — City, City Hall, voted **$250,000** bonds, sanitary sewer extens., sewage plant. Fell & Wheeler, Palace Bldg., Tulsa, consult. engrs. CD 9/12/45.

Pa., Coudersport — Boro, sewage disposal plant, **$199,600.** Gannett, Fleming, Cordory & Carpenter, Inc., 600 N. 2 St., Harrisburg, consult. engr. CD 11/16/45.

●**Tenn., Chattanooga**—City, c/o P. R. Olgiati, sewer imprvs. **$4,350,000.** CD 4/13/48.
comr., City Hall, bond election Oct. 6, sanitary

Tex., Baytown—City, voted bonds, sanitary sewers, **$350,000,** Joe J. Rady, 811 American Fidelity Bldg., Fort Worth, consult. engr.; sewage disposal plant, **$400,000.** Frank J. Metyko, Courthouse, Houston, county sanitary engr. CD 1/5.

Tex., Falfurrias — City, R. R. Scott, mayor, bond election Sept. 9, sanitary sewerage sys. imprv., expanding. **$125,000.** CD 7/28.

Tex., Gilmer—City, voted bonds July 29, sewage collection lines, **$100,000;** sewage disposal plant imprvs. **$90,000.** Royce E. Wisenbaker & Assoc., 1415 N. Dixie Dr., Tyler, consult. engrs.

Tex., Pecos — City, sanitary sewer extens. **$400,000.** Parkhill, Smith & Cooper, 1006-14 St., Lubbock, consult. engrs.

Tex., Texas City—City, City Hall, sanitary sewer interceptor, **$196,000;** sewage treatment plant, **$750,000.** Joe J. Rady, 811 American Fidelity Bldg., Fort Worth, consult. engr. Robert Osburn, city engr.

●**Va., Richmond** — City, City Hall, sewage disposal sys. **$14,000,000.** CD 10/7/43.

●**W. Va., Clarksburg**—City, City Hall, disposal plant, outfall sewers, enlarging, extens. present sanitary sewerage sys., **$3,000,000.** Chester Engineers, 210 E. Parkway, N.S. Pittsburgh, Pa., consult. engrs. CD 12/7/45.

W. Va., Parkersburg—City, City Hall, brick, steel incinerator plant, **$150,000.** Alden E. Stilson & Assoc., 209 S. High St., Columbus, consult. engrs. L. G. Merrill, City Hall, city engr.

Alta., Lethbridge—Municipality, storm and sanitary sewers, **$209,168,** J. Haines, city engr. CD 3/14/46.

Ont., Woodbridge — E. W. Brown, municipality clk., sewers, sewage disposal plant. **$100,000.**

BRIDGES

Fla., Jacksonville—City, raising clearance of Myrtle Avenue underpass beneath Jacksonville Terminal Co., R. R. tracks Dennis St. **$150,000.** W. E. Shedden, Engineers Bldg., city engr.

N. J., Pemberton — Bd. Freeholders Burlington Co. Mt. Holly, bridge reconstr. South Pemberton, **$100,000;** 3 bridges reconstr. at Burlington Centerton and Pemberton and Jobstown, **$100,000.** F. Littell Branin, co. engr.

Wash., Seattle — City, County-City Bldg., Zone 4, paving alleys in Block 25, second plat of West Seattle, **$202,115.** R. W. Finks, city engr.

Ont., Toronto—Municipality, bridge over lagoon next to Lakeside Home and Cibola Ave. **$390,000.** Murray Stewart, city engr.

Que., Montreal—Municipality, Guy St. bridge exten. over Canadian National R. R. tracks. **$250,000.** H. A. Gibeau, city engr.

STREETS AND ROADS

Ill., Chicago—City of Chicago, L. A. Murray, purch. agt., City Hall, paving 1 mi. 51 St., from Kedzie to Western Sts., **$250,000;** c. conc. paving Sacramento Ave., from Logan Blvd. to Elston St., **$280,000;** paving 1 mi. Taylor St., from Ashland to Western Sts., **$250,000;** Roosevelt Rd. viaduct approaches, Wells St., **$67,000.** Dpt. Streets & Electricity, City Hall, engs. CD 4/26/45.

Ind., Fort Wayne — Bd. P. Wks., Fort Wayne, 8 in. c. conc. paving curbs and gutters, 12 block section Lafayette St. between Wallace St. and Columbia St., **$100,000.**

Ia., LeMars—City, City Hall, paving **$300,000.** Buell & Winter, 508 Insurance Exchange Bldg., Sioux City, engrs.

O., Canton—City, Carl F. Klein, mayor, street repair program. **$118,000.**

Tex., Baytown—City, City Hall, voted bonds, permanent type street paving, **$613,000;** street repairs, grading, drainage, **$100,000.** Sam Hoover, city engr.

Tex., Beaumont — City, City Hall, hot-mix topping 11 streets. **$113,000.** R. C. Black, city engr. CD 2/11.

Tex., Cooper—Delta Co., c/o Comrs., Court, Cooper, voted bonds, road constr., imprv., surf., Precinct 1, **$200,000;** Precinct 2, **$175,000;** Precinct 3, **$151,000.** CD 7/21.

●**Tex., Greenville**—Hunt Co., Courthouse, voted bonds, 130½ mi. farm-to-market roads, throughout county. **$1,796,000.**

Tex., Refugio — Refugio Co. Road Dist. 2, Gentry Jeter, judge, Refugio, bond election Sept. 10, addnl. road constr. and asph. surf. **$125,000.**

●**Tex., San Antonio** — City, City Hall, Jack White, mayor, addnl. interregional for freeway road constr. and paving inside city limits. **$2,000,000.** W. W. Toxey, engr.

EARTHWORK, WATERWAYS

●**Miss., Gulfport**—City Ivan Ballenger, clk., City Hall, voted **$2,250,000** bonds, harbor imprvs., incl. rehabilitation East Pier, warehouse facilities, refueling center. CD 7/11.

Tex., Edinburg—Hidalgo County Water Dist. 16, Edinburg, 13,000 acre irrigation dam on LaJoya Creek. **$300,000.**

AIRPORTS AND AIRBASES

Ga., Savannah — ADMINISTRATION BLDG. — City, plans by Oscar M. Hansen, 701 E. 52 St., admin. bldg. at Hunter Field. **$400,000.** CD 1/26.

Kan., Wichita — RUNWAY — Boeing Aircraft Co., R.F.D. 5, Wichita, runway extens., airport branch, for test of bombers. **$100,000.**

●†**Mass., Falmouth** — FUEL STORAGE HANGAR—U. S. of America Purch. & Contg. Office, Otis Air Force Base, fuel storage hangar, Otis Field. **$1,150,000.**

S. D., Pierre — AIRPORT — City, municipal airport. **$125,000.**

Tex., Waco — TERMINAL — City, J. H. Strange, mgr., Waco, plans by N. E. Wiedemann, Liberty Bldg., 3 story 62x136 ft., brick, hollow tile airport terminal, seasonal air-conditioning, etc. **$200,000.** A. C. McAdams, Majestic Bldg., Fort Worth, structural engr. L. E. Kanto, N. P. Anderson Bldg., Fort Worth, mechanical engr. CD 5/12/48.

LATIN AMERICA

Ecuador—Republic of Ecuador, Quito, plans hotels at Manta, Puerto Bolivar and Cuenca, **12,000,000** sucres.

Ecuador, Guayaquil—Republic of Ecuador, Quito, plans water distr. sys., **$2,000,000;** sewerage sys. **$1,000,000.** CD 7/29/46.

Ecuador, Ibarra—Municipality, plans hotel. 1,000,000 sucres. Production Development Corp., Quito, engr.

Mexico, Chihuahua—Mexican Govt., C. F. de E. (Ing. Enrique Lerch,) Humboldt, 30, Mexico, D. F., plans 45,000 watt electric power generating plant. **$6,000,000.**

Mexico, Guadalajara — Municipal Govt., Palacio Municipal, Guadalajara, plans street extens., imprvs. **$1,100,000.**

●**Mexico, Ixtacalco**—Mexican Govt., B. N. E. y A., Ejido, 24 Mexico, D. F., plans home colony for army and navy officers. **$2,000,000.**

Mexico, Orizaba — Sria. de Hacienda (Finance Ministry) Palacio Nacional, Mexico, D.F., Mexico, plans federal bldg. **$1,000,000.**

PUBLIC BUILDINGS

Calif., El Monte—SCHOOL—El Monte Elementary School Dist., El Monte, bond election Oct. 11, school and school addn. **$381,000.**

Calif., Los Angeles—SCHOOL—Bd. Educ., 1425 S. San Pedro St., plans by Austin, Field & Fry, 2311 W. 3 St., industrial arts bldg. at Los Angeles High School. **$250,000.**

●**Calif., Oxnard** — SCHOOL — Oxnard Union High School Dist., Oxnard, plans by Harold E. Burket, 740 E. Main St., Ventura, gymnasium, 5 shop bldgs., 4 classrooms, for new high School, **$1,300,000.** CD 5/19.

Del., Ocean View—SCHOOL—Delaware State Bd. Educ., Ocean View, plans by E. William Martin, 830 West St., Wilmington, school, **$250,000.**

Fla., Orlando—HIGH SCHOOL—Orange Co. Bd. P. Instruction, Orlando, high school between Edgewater Dr. and Lake Silver, Approx. **$300,000.**

Fla., Pensacola—SCHOOL—Escambia Co. Bd. P. Instruction, Pensacola, plans by Younge & Hart, Blount Bldg., 38 classroom high school, **$750,000.**

Ga., Americus—HOSPITAL—City of Americus and Sumter Co., hospital, **$930,000.**

Ga., Atlanta—SHOP FACILITIES—City, plans by Tucker & Howell, Rhodes-Haverty Bldg., Atlanta, addnl. shop facilities for City WW dpt., **$200,000.**

Ga., Cordele—COURTHOUSE, etc.—Crisp Co., Cordele, plans by Bernard A. Webb, Bankers Insurance Bldg., Macon, courthouse and jail, **$350,000.** CD 5/26.

Ga., Demorest—HOSPITAL—Habersham Co., Demorest, plans by Cuttins & Howard, Mortgage Guarantee Bldg., Atlanta, hospital, **$450,000.**

Ga., Summerville —HOSPITAL— Chattooga Co., Summerville, hospital, **$300,000.**

Ill., Evanston—SCHOOL—Evanston Twp. High School, 1600 Dodge Ave., plans by Perkins & Will, 309 W. Jackson Blvd., Chicago, Zone 6, 1 and 2 story, bsmnt., high school, **$650,000.**

Ind., Newcastle — SCHOOL — Newcastle-Henry Twp. School Sys., Newcastle, elementary schools, one in northeast edge of city, one in southeast part in Sunnyside, Approx. **$300,000** each. CD 11/27/45.

Ia., Clarion—HOSPITAL—Wright Co., Clarion, plans by Morgan & Gelatt, Burlington, hospital, **$275,000.** CD 8/1.

Ia., Des Moines — PARKING BLDG. — City, City Hall, multi-level parking bldg. **$600,000.** Bowser Eng. Co., Baltimore, Md., engr. CD 7/31/47, under Unclassified.

Ia., Glenwood—HOSPITAL BLDGS.—State of Iowa, Des Moines, plans by Ralph Arnold, state archt., State Bldg., Des Moines, school and auditorium bldgs., Glenwood State Hospital, **$600,000.**

Kan., Bonner Springs—HIGH SCHOOL—Bonner Spring Rural High School Dist., Bonner Springs, plans by J. W. Radotinsky, 1401 Fairfax Trafficway, Kansas City, Kan., high school, **$370,000** bonds voted. CD 7/11.

Kan., Olathe—PRIMARY—State of Kansas, Topeka, plans by C. L. Marshall, state archt., Topeka, primary bldg., Kansas School for Deaf. **$300,000.**

Mass., Boston—HOUSING—City of Boston Housing Auth., 10 Post Office Sq., Boston, housing (slum clearance), Whittier St., Roxbury, Approx. **$250,000.**

Mass., Dartmouth—SCHOOLS—Town, Richard Tucker, Supt. Schools, Town Hall, plans by Erford W. Pools, 688 Pleasant St., New Bedford, 2 story, bsmnt., L-shaped brick, steel Gridley School addn. **$250,000.** CD 8/2.

Mass., Grafton—HIGH SCHOOL—Town, School Dpt., R. G. Struke, supt., Grafton, Junior High School, Approx. **$600,000.**

●**Mo., St. Louis**—HOUSING—St. Louis Housing Auth., Arthur A. Blumeyer, chn., Civil Courts Bldg., 12 and Market St., Zone 1, plans by George F. Hellmuth, Jr., 5568 Maryland Ave., Zone 8, twelve 6 to 13 story bldgs., incl. 1,000 units, in area bounded by 8 and 9, Biddle and Carr Sts., **$5,600,000-$7,000,000.** CD 1/21/46.

Neb., Omaha—OFFICE—Metropolitan Utilities Dist., 18 and Harney Sts., main office addn. **$300,000.** C. F. Holdrege, c/o owner, engr.

Neb., Omaha—GARAGE—Metropolitan Utilities Dist., 18 and Harney Sts., garage. C. F. Holdrege, c/o owner, engr. CD 7/26.

●**N. J., Camden** — TERMINAL — Delaware River Joint Comn., Camden Plaza, Camden, Camden Terminal, **$1,500,000.** CD 9/6/48.

N. J., Collingswood—GYMNASIUM—Collingswood Bd. Educ., plans by Radley & MacNelly, 101 N. 7 St., Camden, gymnasium, **$340,000.** Horace B. Nicholason, Old Broad St, Station Bldg., Phila., Pa., consult. engr. CD 12/13.

N. M., Anthony—HIGH SCHOOL—Gadsen Independent School Dist., Anthony, plans by Truman J. Matthews, 302 Palace Ave., Santa Fe, 1 story brick Valley Junior High School. **$300,000.**

●†**N. C., Salisbury** — HOSPITAL — Veterans Admin., Vermont Ave. between H and I Sts., N. W. Wash. 25, D. C., 921 bed neuropsychiatric hospital, 411 acre site, northwest of city, **$17,000,000.** (Put back in construction program). CD 1/19, under L.B.

O., Barberton—HOSPITAL—City, bond election Nov. 8, Barberton Citizens Hospital in East Barberton. **$900,000.** CD 3/14/45.

O., Barberton—BUILDING—City, bond election Nov. 8, city bldg. **$450,000.** CD 12/10/43.

O., Cleveland—SCHOOL AUDITORIUM—Bd. Educ., Administration Bldg., E. 6 St., plans by Arthur Baer, c/o owner, 1 story, 75x133 ft., brick, cement block East High School auditorium addn. and some alterations. **$500,000.** CD 3/1/43.

O., Cuyahoga Heights—SCHOOL—Bd. Educ., Cuyahoga Heights, plans by George & Henry Fox, 1835 Union Commerce Bldg., Cleveland, school. Approx. **$250,000.** CD 7/19/45.

O., Maple Heights — SCHOOL — Maple Heights Bd. Educ., Lee and Broadway, plans by Walter G. Caldwell, Engineers Bldg., Cleveland, 2 story, bsmnt., brick, block steel Stafford School addn. Approx. **$250,000.** CD 12/4/47.

O., Napoleon—HOSPITAL—Bd. Comrs Geauga Co., Courthouse, bond election Nov. 8, 2 story, bsmnt., brick hospital. **$750,000.**

O., Newark—CITY HALL, etc.—City, bond election Nov. 8, city hall and municipal auditorium. **$900,000.** CD 1/17/45.

●**Ore., Eugene**—HIGH SCHOOL—School Dist. 4, Eugene, plans by Graham B. Smith, Eugene, 273,903 sq. ft. high school. **$2,000,000.** CD 10/11/48.

Pa., Chester — SCHOOL City School Bd., Chester, plans by J. M. Blew & Son, 1831 Chestnut St., Phila., Jefferis School addn. **$250,000.**

●**Pa., Erie**—HIGH SCHOOL—Bd. Educ., Mill Creek Twp., R.D. 2, plans by Meyers & Krider, 407 Commerce Bldg., brick, steel frame high school. **$1,000,000.**

●**Pa., Reading**—HOUSING—Reading Housing Auth., City Hall, housing developments, **$5,000,000.**

Pa., Scottdale—AUDITORIUM, etc.—School Dist. Scottdale, Scottdale, plans by Robert J. Brocker, Coulter Bldg., Greensburg, 1 story, steel frame auditorium and gymnasium, **$350,000.**

S. C., Bishopville—HOSPITAL—Lee Co. Hospital, Bishopville, plans by H. D. Harrell, Bishopville, hospital, on 50 acres Chappell Property at edge of city on Camden Hy. **$400,000.**

S. C., Walterboro — HOSPITAL — Colleton Co., Walterboro, plans by John H. Truluck, Walterboro, and Lafaye, Lafaye & Fair, 1226 Sumter St., Columbia, hospital. **$600,000.**

Tex., Bryan—COURTHOUSE, etc.—Brazos Co., A. S. Ware, Judge, Courthouse, 4 story courthouse and jail. Approx. **$350,000.**

●**Tex., Commerce**—ADMINISTRATION, etc.—East Texas State Teachers College, Commerce, plans by George L. Dahl, 1920½ Main St., Dallas, masonry administration, **$850,000;** masonry library, **$750,000;** classrooms, converting existing library, **$400,000;** science and gym addns., **$450,000.**

●**Tex., Corsicana**—HOUSING—Corsicana Housing Auth., c/o H. T. Braselton, mayor, Corsicana, 200 unit federal-built housing program. **$1,500,000.**

Tex., Edna—COURTHOUSE—Jackson Co., c/o judge, Courthouse, Courthouse, Approx. **$400,000.**

Tex., Huntsville—DORMITORY, etc.—Sam Houston State Teachers College, c/o Bd. Regents, Huntsville, plans by Wirtz, Calhoun & Tungate, 500 Stuart Ave., Houston, 3 story dormitory and music bldg., masonry, concrete pier and beam fdn. **$550,000;** 3 story students union bldg. **$450,000.** W. P. Moore, 4605 Montrose Bldg., Houston, consult. engr. Zimmerman & Bible, 500 Stuart St., Houston, mechanical engrs. CD 3/24 and 6/27.

Tex., Rhome—HIGH SCHOOL—Northwest Independent School Dist., c/o J. H. Hughes, supt., Roanoke, plans by Wilson & Patterson, 209 Majestic Bldg., Fort Worth, high school. **$275,000.** Bonds voted. CD 3/4/46.

●**Wash., Seattle**—SCHOOLS—School Dist. 1, 810 Dexter Ave., plans by William Mallis, Lyon Bldg., Zone 4, Southwest Junior High School, **$1,500,000;** Rainier Junior School, **$2,000,000;** plans by Jones & Bindon, Hoge Bldg., Zone 4, Van Asselt Grade School, **$700,000.** CD 11/10/48.

†**Utah, Brigham City**—AUDITORIUM—U. S. Indian School, Brigham City, plans by A. B. Paulson, 727 Continental Bank Bldg., Salt Lake City, auditorium and gymnasium at U. S. Indian School. **$500,000.**

●**Wis., Madison**—CENTER BLDG.—University of Wisconsin, Madison, plans by Foeller, Schober, Berners, Safford & Jahn, 310 Pine St., Green Bay, Center Bldg., **$3,000,000.** Rober C. Kirchhoff, State Capitol, state archt.

●**B. C., Victoria**—HOUSING—Engineer, c/o Central Mortgage & Housing Corp., 70 Lyon St., Ottawa, Ont., 500 housing units, for Naval Personnel, Greater Victoria (Victoria and Esquimalt Naval Base), Approx. **$4,000,000;** 1,100 houses, and duplexes for D. N. D. (Naval and other service personnel) greater Victoria (Victoria and Esquimalt Naval Base), Approx. **$10,000,000.**

Newfoundland, St. Johns — BIOLOGICAL STATION—Dominion Government, Hunter Bldg., Ottawa, Ont., bological station, bait depots for North West Atlantic ports, **$500,000.** Dpt. Fisheries, Ottawa, Ont., engrs.

Ont., Burks Falls—HIGH SCHOOL—School Bd., 5 Queen St., plans by F. W. Warren, 7 Hughson St., Hamilton, 1 story, 67x233 ft. high school, **$250,000.**

Ont., Peterborough—CITY HALL—City, E. A. Outram, clk., plans by Maran & Morris, 1250 Bay St., Toronto, city hall addn. Approx. **$650,000.** CD 4/20/44.

Ont., Port Arthur — HOUSING — Central Mortgage & Housing Corp., 506 Kensington Bldg., Winnipeg, Man., 75 houses, to Claydon Co. Ltd., 16 Victoria Block, Fort William, Approx. **$525,000.** H. C. Spence, c/o owner, engr. Bids 7/25. CD 7/19.

●**P. E. I., Summerside**—HOUSING—Central Mortgage & Housing Corp., 1032 Gottingen St., Halifax, N. S., 150 houses for D. N. D., to Bayside Constr. Co., Campbellton, Approx. **$1,000,000.** Bids 7/6. CD 6/28.

Que., Lachute—SCHOOL—M. Champagne, archt., Lachute Mills, school addn. at St. Viateur College, Grace St. Approx. **$575,000.**

Sask., Saskatoon—SCHOOL—Municipality, ratepayers to vote Nov. 2, school, **$400,000.**

Sask., Saskatoon—NURSES RESIDENCE—Municipality, ratepayers to vote Nov. 2, addn. to Queens St. Nurses Residence, **$325,000.** CD 5/2.

COMMERCIAL BUILDINGS

Ark., Hope — AUDITORIUM — First Baptist Church, Hope, plans by McAninch & Mahnker, Exchange Bldg., Little Rock, church auditorium, **$250,000.** CD 11/23/45.

Calif., Los Angeles—DORMITORY—Jewish Hospital for the Aged, 325 S. Boyle Ave., plans by Albert Criz, 556 S. Harvard Blvd., 54x131 ft. 68 room dormitory, **$400,000.**

Calif., San Francisco—APARTMENT—Louis Preston c/o Goldstine & Heiser, 821 Market St., San Francisco, 10 story Class-A apartment house, **$750,000.**

Colo., Denver — SCHOOL — Parish of the Blessed Sacrament, 1973 Elm St., plans by John F. Connell, engr. and archt., 2445 Cherry St., 2 story, bsmnt. school, 5 classrooms, gymnasium, cafeteria, etc. **$250,000.**

Conn., New Haven — CHURCH — The First Church of Christ Scientist, 278 Winthrop Ave., plans by Douglas Orr, 96 Grove St., brick, stone church, Whitney Ave. and E. Rock Rd. **$250,000.**

D. C., Wash. — FILM EXCHANGE—Twentieth Century Fox Corp., 932 N. J. Ave. N.W., plans by Frank Grad & Sons, 1739 Connecticut Ave. N.W., 1 and 2 story, concrete, brick, stone film exchange bldg., 415 Third St. N.W. **$220,000.**

Fla., Hallandale — CLUBHOUSES — Gulfstream Park Racing Assn., c/o Robert Little, archt., 605 Lincoln Rd. Bldg., Miami Beach, clubhouse, **$500,000.** CD 7/28.

Fla., Miami—APARTMENTS—A. M. Menocal, c/o F. A. Harris, archt., 501 Ingraham Bldg., 48 apartment units. Approx. **$250,000.**

●**Fla., Panama City** — HOUSING — J. H. Mc Cormick & Assoc., 1300 S. Perry St., Montgomery, Ala., 200 family unit housing, **$1,000,000.**

●**Ill., Belleville**—HOSPITAL—St. Elizabeths Hospital, Hospital Sisters of the Third Order of St. Francis, Mother Superior Magdalene, 1318 N. 6 St., plans by Henry R. Slaby, 2750 N. Teutonia Ave., Milwaukee, Wis., 7 story, brick, rein.-con. steel, stone X-shaped hospital addn. **$2,500,000.** CD 3/5/47.

Ill., Chicago—APARTMENT—5858 Sheridan Bldg. Corp., c/o Frank McNally & Assoc., 105 W. Madison St., Zone 3, 12 story, steel, brick, concrete apartment. **$950,000.**

●**Ill., Chicago**—HOUSING—John J. Mack & Assoc., c/o Shaw, Metz & Dolio, archts., 208 S. LaSalle St., Zone 4, three 13 story apartments, incl. 147 units each, Sheridan and Briar Pl., Sheridan and Barry Aves., and Sheridan and Oakdale Aves. **$4,500,000.**

●**Ill., Chicago** — APARTMENT — Owner, c/o Monroe Bowman & Assoc., archts., 2221 N. La Salle St., Zone 1, steel, concrete apartment, Marine Dr. and Gordon Terrace, **$1,900,000.**

●**Ill., Oak Park** — BUILDING — Young Mens Christian Assn., Rupert D. O'Brien, secy., Randolph and Marion Sts., plans by Philip D. West, 185 N. Wabash St., Chicago, Zone 1, 6 story, brick, rein.-con. Y. M. C. A. bldg., **$2,000,000.**

Ind., Anderson — CHURCH — Park Place Church of God, Anderson, church, College Dr., near Anderson College. **$250,000.**

Me., Lewiston — BANK—Manufacturers National Bank, Lewiston, plans by Cram & Ferguson, 248 Boylston St., Boston, Mass., bank. Approx. **$250,000.**

Me., Portland—HOSPITAL—Mercy Hospital 144 State St. plans by Edward P. Graham, 171 Newbury St., Boston, Mass., 6 story, bsmnt., hospital wing. **$600,000.**

Md., Baltimore—CHURCH and SCHOOL—St. Michaels Catholic Church, Rev. Wm. F. Sauer, pastor, Belair Rd. and Willow Ave., plans by Murphy & Locraft, 1518 P St. N. W., Wash.,

D. C., 3 story, 56x200 ft., brick, stone, steel, concrete church and school.

N. J., Atlantic City—HOME—Children's Seashore House, Annapolis and Atlantic Aves., plans by Sidney Martin, 1700 Walnut St., Phila., Pa., home addns., alterations, Approx. **$250,000.** CD 6/6/46.

N. J., Blackwood — ADMINISTRATION BLDG., etc.—Mother of Our Saviour, Seminary, Little Gloucester Rd., plans by George Von Uffel, Jr., 30 Warwick Rd., Haddonfield, admin. bldg. gymnasium, auditorium, classrooms, dormitory and chapel. **$600,000.**

●**N. J., Westville**—APARTMENT—M. A. Sarshik, 27 St. and Marlton Pike, Camden, plans by Edward & Green, engrs. and archts., Broadway and Carman Sts., Camden, apartment development. **$2,000,000.**

●**N. Y., Bayside**—HOSPITAL—St. Mary's Hospital for Children, 405 W. 34 St., New York, Zone 1, plans by George B. Post & Sons, 101 Park Ave., New York, Zone 17, hospital on 6 acre site, 216 St. and 29 Ave., **$1,000,000.**

O., Cleveland—HOSPITAL—Benjamen Rose Institute, 1010 Rose Bldg., plans by Garfield, Harris, Robinson & Shafer, 1740 E. 12 St., 3 story, bsmnt., 120x170 ft., brick, steel chronic hospital, 2069-73 Abingdon Rd. **$400,000.**

●**O., Lorain**—CHURCH, etc.—Delaware Ave. M. Church, H. W. Werber, chn. Bldg. Comn., Delaware and Erie Sts., plans by A. L. Fauver, 947 Broadway Ave., 1 story, bsmnt., 50x76 ft., brick church addn. and sanctuary, also remodeling present bldg. into Sunday school rooms, assembly for 300, **$1,000,000.** Frank Eroskey & Assoc., Rose Bldg., Cleveland, consult. engr.

O., Oberlin — HOSPITAL—Trustees Oberlin College, 32 E. College St., plans by Conrad, Hayes, Simpson & Ruth, 1110 Hanna Bldg., Cleveland, 2 story, bsmnt., brick, steel Allen Hospital addn., alterations, E. College St. **$400,000.**

Ore., Eugene—APARTMENT—H. R. Ketell, Board Trade Bldg., Portland, 6 story 72 unit concrete apartment on 11 near mill race. **$700,000.**

●**Ore., Portland**—HOSPITAL—Good Samaritan Hospital, 2266 N. W. Marshall St., plans by Sutton, Whitney & Aandahl, Failing Bldg., 267 bed hospital wing. **$2,000,000.**

Ore., Redmond—HOSPITAL—Central Oregon Memorial Hospital Com., Redmond, plans by Gerald G. Scott, Builders Exchange Bldg., Portland, 1 story 36 bed T-shaped, frame, brick hospital. **$300,000.** Pierson & Tidball, Concord Bldg., Portland, consult. engrs.

●**Pa., Brentwood** — SHOPPING CENTER — Philip Reicher, 5880 Forbes St., Pittsburgh, plans by Clarence Blezard, 901 Ridge Ave., Pittsburgh, 1 story, bsmnt., L shaped, 300x500 ft., steel, brick, granite shopping center and parking area. **$1,000,000.**

●**Pa., Phila.**—HOTEL—William Greenhouse & William Stuempfig, 5601 N. Broad St., apartment hotel. **$2,500,000.**

Pa., Phila—STORE, etc.—Sun Ray Drug Co., 1227 N. Broad St., store, radio station and offices, **$250,000.** A. Pincus, c/o owner, ch. engr.

Pa., Pittsburgh—APARTMENT—Perry Norman Apartment Corp., 203 Jackson Circle, West View, plans by Clarence V. Blezard, 901 Ridge Ave., 3 story, bsmnt., brick veneer on block apartment, Ross Twp. **$250,000.**

Pa., Pittsburgh—APARTMENT—South Aiken Apartments, Inc., 4066 Liberty St., plans by Phillip Friedman, 121 S. Negley Ave., 3 story, bsmnt., brick, block apartment, 545 S. Aiken Ave. **$250,000.**

Pa., Wilkinsburg — APARTMENT — C. R. Mathewson, Verona Rd., Pittsburgh, plans by Clarence Blezard, 901 Ridge Ave., Pittsburgh, sixteen 3 story, bsmnt., brick apartments. **$400,000.**

S. C., Greenville—CLUBHOUSE—Greenville County Club, Greenville, clubhouse. **$300,000.**

Tex., Alice—MERCANTILE—Dr. F. A. Bass, Alice, plans by Jim Stickter, 1206 3 St., Corpus Christi, 70x275 ft. masonry mercantile bldg. **$250,000.**

Tex., Dallas — CHURCH—Church of Christ, Sears and Summitt Sts., plans by Everett V. Welch, 2618 Cedar Springs Rd., masonry church, concrete slab fdn. **$300,000.** CD 5/29/47.

Tex., Houston — HOUSING — S. N. Adams, 3713 Inwood St., housing adjoining Tall Timbers Sect. between San Felipe and Westheimer Rds. **$450,000.**

●**Tex., San Antonio** — HOUSING — Albert Hirschfeld, Milam Bldg., 440 unit housing, Allena Village, **$2,000,000;** shopping center, Allena Village, on 109 acre tract off Blanco and Basse Rds., **$300,000.** J. W. Beretta Engineers Inc., 902 Travis Bldg., consult. engr.

Tex., San Antonio—CHURCH—Trinity Baptist Church, 103 Oakleaf St., church, education, auditorium, pastors dwellings, incl. playgrounds, 5½ acre site off Shoop and W. Mulberry Sts. **$550,000.**

●**Wash., Long Beach**—RECREATIONAL CENTER—Arthur Moulton, Mid-Dale Dairy Farm, Vancouver, recreational center with Beard's Hollow, swimming pools, jetty, camps, etc. **$1,000,000.** B. A. Greene, c/o owner, engr.

Wash., Seattle—LODGE—Sons of Norway, 2015 Boren Ave., plans by E. K. Mahlum, 1305 Republic St., 3 story lodge **$400,000.** Hostmark Eng. Co., Lloyd Bldg., Zone 1, consult. engr.

Wash., Wapato — HOMES — Modern Home Builders, Inc., 3849 34 Ave., Seattle, 60 houses. **$400,000.**

Wis., Appleton—SCHOOL—Fox River Valley Lutheran High School Assn., 121 N. Appleton St., plans by E. A. Stubenrauch, 708 Erie Ave., Sheboygan, 2 story Lutheran High School. **$374,850.**

Wis., Greenfield (Milwaukee P. O.)—OFFICE—Froedert Grain & Malting Co., 3830 W. Grant St., Zone 7, plans by Grassold & Johnson, 734 N. Jefferson St., Zone 2, office. **$250,000.**

Alaska, Fairbanks — HOSPITAL—Sisters of Charity of Providence, Fairbanks, plans by J. W. Maloney, Central Bldg., Seattle, 4, Wash., 3 story, bsmnt., 46x140 ft., rein.-con. St. Josephs Hospital addns. **$500,000.**

Alaska, Fairbanks—APARTMENTS—W. A. Taylor, Gradelle Leigh and B. F. Meyers, Fairbanks, apartments. **$718,000.**

Ont., Ottawa—HOUSING—Capital City Cooperative, Bldg. Society Ltd., c/o C. J. Lacelle, secy., Ottawa, housing. **$250,000.**

Que., Richmond — HOME—Protestant Old People Dr., E. C. Manning, secy., Richmond, plans by McDougall, Smith & Fleming, 1235 McGill College Ave., Montreal, Old Peoples Home addn. Approx. **$500,000.**

INDUSTRIAL BUILDINGS

Ala., Birmingham — TERMINAL — Greyhound Bus Lines, c/o W. S. Arrasmith, 1720 Euclid Ave., Cleveland, O., bus terminal. Approx. **$100,000.**

●**Calif., North Sacramento**—GAS HOLDER—Pacific Gas & Electric Co., 243 Market St., San Francisco, 6,000,000 cu. ft. underground gas storage holder. **$1,297,000.**

●**Colo., Rifle and Newcastle** — MILL — Columbine Development Co., Preston Walker, genl. mgr., Grand Junction, paper mill. **$15,000,000.**

Conn., Bridgeport—WAREHOUSE—Jenkins Brothers, Main St., plans by Fletcher Thompson, Inc., 211 State St., 1 story, 80x220 ft., cinder blocks, concrete warehouse, Railroad Tracks State St. Exten. **$125,000.**

Del., Wilmington—STORAGE, etc.—H. T. duPont, Kennett Pike, storage and barn bldg., **$150,000.**

Ill., Chicago — PLANT — Richheimer Coffee Co., Robert C. Richheimer, pres., 1127 N. Halsted St., Zone 10, plans by Friedman, Alshuler & Sincere, 223 W. Jackson St., Zone 6, 1 story and part 2 story, brick, steel coffee roasting and packing plant, **$300,000.**

Mo., St. Louis—PARKING GARAGE—Mandel Investment Co., M. H. Mandel, pres., 2120 Locust St., Zone 3, 4 story, bsmnt., parking garage, remodeling Taylor Bldg., St. Charles St., in block from 9 to 10 Sts. Approx. **$300,000.**

●**Neb., Lincoln**—GRAIN ELEVATOR—Equity Union Grain Co., Bd. Trade Bldg., Kansas City, Mo., grain elevator. **$2,000,000.**

Neb., Lincoln — PUBLISHING PLANT — State Journal Printing Co., 9 and P Sts., plans by Davis & Wilson, Stuart Bldg., publishing plant. **$300,000.**

●**N. J., Toms River** — PLANT — Cuba Pharmaceutical Products, Inc., 555 Morris Ave., Summit, drug mfg. plant. Approx. **$1,000,000.**

N. Y., New York—PLANT and STORAGE—Riverton Equities, Inc., 25 W. 45 St., Zone 19, plans by Samuel Roth, 305 Broadway, Zone 7, ice mfg. plant and ice storage, 22 E. 141 St., **$100,000.**

●**O., Campbell** — MILL — Youngstown Sheet & Tube Co., Stambaugh Bldg., Youngstown, enlarge blooming mill at Campbell Works. **$4,500,000.**

●**O., Georgetown** — PLANT — Hanna Coal Co., c/o James Hyslop, St. Clairsville, 1 story, steel, concrete coal treatment plant. **$3,500,000.** Allen & Garcia, 332 S. Michigan St., Chicago 4, Zone 4, engrs.

●**O., Warren**—MILL—Thomas Steel Co., Warren, mill. **$1,200,000.**

Okla., Blackwell — SMELTER — Bartlesville Zone Co., Blackwell, zinc smelter addn. Approx. **$500,000.**

●**Pa., McKeesport**—MILL—National Tube Co., McKeesport, mill, **$1,000,000.**

Pa., New Castle — PACKING PLANT — New Castle Packing Co., County Line Rd., plans by Henschein, Everds & Crombie, 59 E. Van Buren St., Chicago, Ill., 1 story, brick, steel, steel packing plant, Mahoning Ave., **$250,000.**

Pa., Oil City — NEWSPAPER PLANT — Oil City Derrick, 5 Center St., plans by Earl W. Bolton, 266 S. 17 St., Phila., 2 story brick newspaper bldg., Elm St. **$250,000.**

Pa., Phila.—GARAGE—Louis Adelson, 4056 N. 7 St., garage, oil burner showroom and filling station, **$150,000.**

Pa., Phila.—PLANT—John Lucas & Co., Inc., Gibbsboro, paint plant, **$150,000.**

Tenn., Chattanooga — CHEMICAL — Tennessee Products & Chemical Corp., Alton Park, rebuilding chemical bldg. Approx. **$300,000.**

●**Tenn., Memphis** — GARAGE — Boyle Investment Co., 148 Monroe Ave., auto parking garage. **$1,000,000.**

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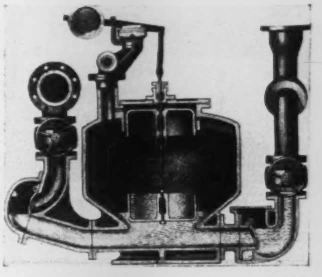

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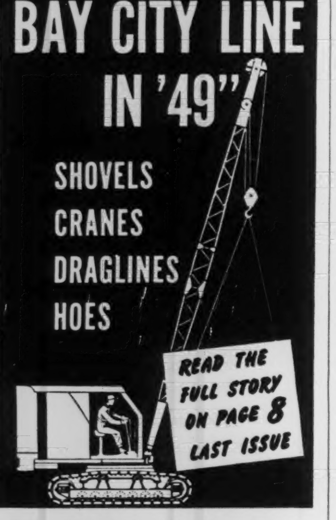

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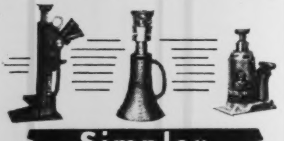

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Tex., Austin — LUMBER YARD — Calcasieu Lumber Co., 301 W. 2 St., reconstruct burned out lumber yard. Approx. **$100,000.**

Tex., Bay City — WAREHOUSE — Groce-Wearden Co., Inc., Victoria, plans by Leffland & Ault & Stein, Victoria Natl. Bank Bldg., Victoria, 200x260 ft., masonry warehouse, concrete slab fdn. **$200,000.**

Tex., Dallas — WAREHOUSE — Pittsburgh Plate Glass Co., c/o T. E. Jackson, mgr., 2nd Unit Santa Fe Bldg., masonry warehouse and office, 100,000 sq. ft. tract in Trinity Industrial area. Approx. **$750,000.**

Tex., Fort Worth—GENERATOR SERVICE—Beard & Stone Electric Co., Macon and 13 Sts., plans by Wilson & Patterson, 209 Majestic Bldg., 1 story bsmnt., 150x200 ft., brick, tile, stone, granite, rein.-con., steel generator service bldg., air-conditioning, 12 and Macon Sts. **$250,000.**

Tex., Houston—WASHROOMS and LOCKER BLDGS.—Beaumont, Sour Lake & Western Ry. Co., C. S. Kirkpatrick, ch. engr., 204 Union Station, and Missouri-Pacific Ry. Lines, R. P. Hart, ch. engr., Missouri Pacific Bldg., St. Louis 3, Mo., 22x30 ft. hollow tile washrooms and locker bldgs. at Settegast Yards. **$175,000.**

Tex., Houston — GARAGE, etc. — Continental Bus Center, 300 Travis St., plans by Hucker & Jones, Amarillo, 62x120 ft. masonry, steel repair garage, shop, and baggage storage, concrete slab fdn., Texas and Bagby Sts. **$175,000.**

Tex., Houston — DAIRY — Foremost Dairies, Inc., 1706 Washington St., plans by H. K. Ferguson Co., engrs. and archts., M & M Bldg., 100x125 ft. steel, masonry dairy bldg. **$275,000.**

Tex., Houston — SHOP — Lester Goodson Pontiac Co., 1117 San Jacinto St., 1 and 2 story, 100x150 ft. structural steel frame, masonry auto shop, service, sales, drilled footing fdn. **$125,000.** Irving & Hoyt, 5519 Memorial Dr., consult. engrs. CD 7/30/48.

Tex., Houston — SHOP — Bob Robertson, Inc., 302 Broadway Blvd., plans by Matkin, Fitch & Assoc., 6731 Harrisburg Blvd., 20,000 sq. ft. masonry, mechanical service shop, sales, display, storage, concrete slab fdn., air-conditioning, Gulf Freeway, just west of Wayside Dr. **$100,000.**

Tex., Houston — SALES, SERVICE, etc. — Rosenstock Motors, Inc., 1120 McKinney St., 32,500 sq. ft. stone, brick, steel auto sales, service and wholesale parts, concrete slab fdn. **$300,000.**

Tex., Paris — PLANT — DeKalb Seed Co., DeKalb, Ill., converting and remodeling industrial area of old Camp Maxey into poultry plant. **$100,000.**

●**Utah, Marysvale** — MILL — Green River Exploration Co., Salt Lake City, uranium-ore mill. Approx. **$10,000,000.**

Utah, North Salt Lake City — THERMAL CRACKING UNIT—Western States Refining Co., J. Howard Valentine, vice pres., North Salt Lake City, thermal cracking unit, **$100,000.**

Alta., Edmonton — WAREHOUSE — Panther Oil & Grease Mfg. Co. of Canada Ltd., Edmonton, warehouse, **$150,000.**

Alta., Lethbridge — STOCK YARDS — Alberta Stock Yards, Co. Ltd., Calgary, exten. stock yards. **$100,000.**

●**Ont., Cobourg**—PLANT—Bradford Dyeing Assn. (Canada) Ltd., 54 Front St. W., Toronto, plant facilities extens., Approx. **$1,000,000.**

Ont., Kingston—PLANT—Canadian Industries Ltd., 1135 Beaver Hall Hill, Montreal, Que., plant addn., **$150,000.** L. R. Tait, c/o owner engr. CD 1/29/45.

●**Ont., London** — PLANT — General Motors Corp., C. E. Wilson, pres., Oshawa, Crumlin Plant manufacturing diesel locomotives. Approx. **$5,000,000.** F. J. Lyle, c/o owner, engr.

Ont., London — PLANT — German Motors Diesel Ltd., London, diesel electric locomotive plant, **$250,000.**

Ont., London—FACTORY—Hygrade Products Co., W. Wilkins, mgr., 640 William St., London, 1 story, brick, steel, concrete factory addn. **$100,000.**

●**Ont., Scarborough** — PLANT — S. K. F. Co. Ltd., 1057 Bay St., Toronto, plant, **$3,000,000.**

Que., Gatineau Mills—PLANT—Commercial Alcohols Ltd., 3176 Notre Dame St. E., Montreal, 1 story, bsmnt. 51x136 ft., rein.-con. brick, steel denaturing plant, shipping room, etc. Approx. **$125,000.**

Que., Rouyn — MINE SHAFT — Quesabe Mines Ltd., C. W. Croskery, pres., Rouyn, flashing out and deepening mining shaft, installation electric mining plant, cross cutting work. **$200,000.**

●**Que., Three Rivers** — BREWERY — Eastern Agencies Ltd., 108 Gallery Sq., Montreal, brewery, Approx. **$1,000,000.**

UNCLASSIFIED

Arkansas—RURAL DISTRIBUTION LINES—Arkansas Valley Electric Co-operative, Ozark, 291 mi. rural distr. lines, Dale Co., etc. **$255,000.** H. B. Gieb & Assoc., Texas Bank Bldg., Dallas, Tex., consult. engrs.

Arkansas—RURAL DISTRIBUTION LINES—First Electric Co-operative Corp., Jacksonville, 500 mi. rural distr. lines, sys. imprv., Pulaski Co. **$735,000.**

Calif., San Carlos—RINK—Peninsula Iceland, Inc., 112 W. 25 Ave., San Mateo, plans by Albert W. Kahl, 18 2 Ave., San Mateo, ice skating rink, **$300,000.** CD 6/14.

Indiana and Michigan—RURAL DISTRIBUTION LINES—Indiana & Michigan Electric Co., South Bend, Ind., 66,000 volt rural distr. lines, from Lagrange, Ind. to Sturgis, Mich.

Iowa — RURAL DISTRIBUTION LINES — Guthrie County Rural Electric Co-operative; Guthrie Center, 142 mi. rural distr. lines, sys. imprvs., 34 mi. tie lines, etc., Guthrie Co. **$182,000.** P. L. Burns, Davenport, engr.

Ia., Des Moines — STADIUM and FIELD HOUSE — Drake University, 25 and University Sts., Drake Stadium and Field House, addns., alterations, **$100,000.**

Kansas—RURAL DISTRIBUTION LINES—Northwest Kansas Electric Co-operative, Bird City, 615 mi. rural distr. lines, Cheyenne Co. **$895,000.** W. H. Burgwin, Fredonia, engr.

La., New Iberia — EXHIBITION BLDGS. — Louisiana Sugarcane & Fair Assn., New Iberia, plans by J. Southwell, New Iberia, exhibition bldg. **$175,000.**

Minn., Thief River Falls—FAIR GROUNDS IMPRVS. — Pennington Co., J. Roche, chn., plans by Bettenburg, Townsend & Stolte, 1437 Marshall Ave., St. Paul, fair ground imprvs., incl. grading, drainage, race track, bldgs. **$500,000.**

Nebraska—RURAL DISTRIBUTION LINES—K. B. R. Electric Membership Corp., Bassett, 490 mi. rural, distr. lines, Rock, Brown, Cherry and Keya Paha Counties. **$500,000.** Raymond H. Reed & Co., Columbus, consult. engr.

Neb., Hastings — SWIMMING POOL — City, swimming pool, etc. **$100,000.**

Neb., Omaha—GAS MAIN—Metropolitan Utilities Dist., 18 and Harney Sts., 16 in. gas main, high pressure from Ed. Creighton Ave. and Hanscom Blvd. to governor station, **$100,000.** C. F. Holdredge, c/o owner, engr.

N. J., Camden—PARK, etc.—Camden Co. Park Comn., Courthouse, park at Baldwin Run, approx. **$50,000;** recreation field, lights, and grandstand at Baldwin Run Park, approx. **$50,000.**

●**New York and Massachusetts**—PIPELINE—Tennessee Gas Transmission Co., Commerce Bldg., Houston, Tex., approx. 383 mi. natural gas pipeline exten. from Buffalo area, N. Y. to Worcester, Mass., appurtenances, and system capacity expansion, etc. **$94,000,000.**

O., Columbus—STADIUM PRESS BOX—Ohio State University, Columbus, stadium press box providing space for expanded radio and television facilities. **$200,000.**

O., Defiance—FIELDHOUSE, etc.—City, bond election Nov. 8, 110x160 ft. fieldhouse and sports center, addnl. 20x160 ft. special purpose rooms. **$160,000.** CD 8/8.

●**Oklahoma** — PIPELINE — Shell Pipe Line Corp., Mayo Bldg., Tulsa, 160 mi. 10 in. crude oil pipeline from Elk City to Cushing, **$4,000,000.** CD 8/8.

Pa., Phila.—DRIVE-IN THEATRE—Harry Bolhover & Charles Goldfine, 1239 Vine St., drive-in movie theatre, Broad St. and Pattison Ave., **$250,000.**

Texas—RURAL DISTRIBUTION LINES—Dickens County Electric Co-operative, Inc., Spur, rural distr. lines, Dickens Co. **$160,000.**

●**Texas**—OIL PIPELINE—Humble Pipe Line Co., Humble Bldg., Houston, 375 mi. 18 in. welded joint crude oil pipeline from Kemper (near Texon) to Satsuma, 20 mi. north of Houston, **$18,000,000.** CD 1/14.

Tex., Commerce — FIELD HOUSE-STADIUM—East Texas State Teachers College, Commerce, plans by George L. Dahl, 1920½ Main St., Dallas, masonry field house—stadium, **$450,000.** CD 4/1/47.

Tex., Corpus Christi—HEATING SYS., etc.—Estate of Charles E. Coleman, 1319 Leopard St., plans by Joe G. Smyth, Jr., Gulf Security Bldg., steam heating sys. and 120 ton air-conditioning sys. **$125,000.** Halsey & Royer, 911 Transit Tower, San Antonio, electrical and mechanical engrs.

Tex., Dallas—VAULT—National Bank of Commerce, 904 Elm St., 4 story, concrete, steel vault, air-conditioning. **$500,000.** B. W. Lanum, Texas Bank Bldg., consult. engr.

Tex., Fort Worth—RADIO STUDIOS, etc.—Baptist Foundation of Texas, c/o Radio Dpt., Baptist Bldg., Dallas, radio studios and facilities, Southwestern Theological Seminary, **$75,000;** at Buckners Orphans Home, **$75,000.**

Tex., Houston—LIGHTING—City, City Hall, 900 Brazos St., street lighting expan., incl. installing approx. 267 lights. **$100,000.** L. Fugate, city engr.

Tex., Texas City—SWIMMING POOL—City, rein.-con. outdoor swimming pool. **$100,000.** Paddock Eng. Co. of Texas, M & M Bldg., Houston, consult. engr. CD 8/8.

Quebec—RAILWAY—Quebec Iron & Titanium Corp. Sept. Iles, Que., and 602 Royal Bank Bldg., Toronto, Ont., survey's 300 mi. railway from Burnt Creek, Ungava to Sept, Iles.

Saskatchewan—GAS WELL DRILLING—Union Oil Co. of California, 617 W. 7 St., Los Angeles, Calif., U. S. A. gas well drilling in unorganized territory, **$150,000.**

CONSTRUCTION REPORTS—Second Section

WATER SUPPLY

BIDS ASKED

August 31

N. Y., Lawrence and Atlantic Beach—Long Island Water Corp., 733 Sunrise Hy., Lynbrook, laying approx. 1,000 lin. ft. 16 in. flexible-jointed c. i. pipe across Reynolds Channel between Beach 2 St., Lawrence, and 7 St., Atlantic Beach. Plans deposit $10. Thomas H. Wiggin, 90 Broad St., New York, Zone 4, consult. engr.

September 2

●**O., Cleveland**—City, E. J. Crown, dir. Pub Utilities, City Hall, Lakeside and E. 6 Sts., Nottingham Filtration Plant (Div. C) incl. pump bldg., machine shop and garage, raw water intake and filter equip. $3,000,000. Plans deposit $75. Extended date. F. J. Schwembek, Auditorium Bldg., city engr. Havens & Emerson, 1140 Leader Bldg., consult. engrs. CD 7/27.

September 6

Md., Hyattsville—At office W. R. Douglas, purch. agt. Washington Suburban Sanitary Comn., Hamilton St., furnishing, del. approx. 750 tons c.i. pipe and cast iron fittings; adv. ENR 8/25.

Miss., Edwards—Town, C. O. Read, clk., water distr. sys. extens. Plans deposit $5.

Ont., Windsor—Public Utilities Comn., Windsor, supply, delivery 9,470 ft. 42 in. and 8,800 ft. 36 in. pipe, for Municipality. CD 10/9/47.

September 9

Ga., Gracewood—State Dpt. P. Welfare, State Office Bldg., Atlanta, watermains, imprvs. at Gracewood Institution. Plans deposit $25. A. P. Welker, 206 Roswell St., Marietta, engr.

September 12

Ky., Princeton—City, filtration plant, $100,000. Extended date. Black & Veatch, 4796 Broadway, Kansas City, Mo., engrs. CD 7/5.

LOW BIDDERS

Calif., Long Beach—City, Aug. 11, 25 m. g. water treatment plant, from Wonderly Constr. Co., 2694 Time Ave., **$550,991.** Est. $660,000. CD 7/25.

SEWERS, WASTE DISPOSAL

BIDS ASKED

September 7

Calif., San Francisco — Dpt. P. Wks., City Hall, North Point Sludge Force Main. Approx. $50,000. Plans deposit $50. Ralph Wadsworth, City Hall, city engr. CD 10/28/47.

Ga., Valdosta—City, sanitary sewer Proj. No. 4. Plans deposit $5. Smith & Gillespie, P. O. Box 1048, Jacksonville, engr.

Md., Salisbury—City, City Hall, 125-ton garbage and refuse incinerator. Plans deposit $20. Clarke Gardner, 109 Calvert St., consult. engr. CD 6/21.

September 8

N. Y., Valley Stream—Bd. Trustees, at office Fletcher G. Chalmers, clk., Village Hall, remodeling incinerator. Plans deposit $25. Henry W. Taylor, 11 Park Pl., New York, N. Y., consult. engr.; adv. ENR 8/25.

September 12

La., Donaldsonville — City, exten. sanitary sewerage sys. Plans deposit $5. Brown & Butler, P. O. Box 605, Baton Rouge, engrs.

September 14

Calif., Sonoma — City, City Hall, sanitary sewerage sys. addns., Approx. $50,000. Plans deposit $15. Richard M. Starns, 15 Norwood Ave., Berkeley, engr. CD 6/30/47.

Calif., Woodbridge — Woodbridge Sanitary Dist., Woodbridge sanitary sewers, sewage disposal works. Plans deposit $10. Davis & Holman, 234 W. Harding Way, Stockton, engrs.

September 21

●**Fla., Tampa**—Mayor and Bd. Representatives, City Hall, sewer imprvs., Krause St. Pumping Station. Greeley & Hansen, 220 S. State St., Chicago 4, Ill., engr. Bid date changed. CD 7/25.

September 22

●**Fla., Tampa**—Mayor and Bd. Representatives, City Hall, river and channel crossings, sewage treatment plant and intercepting and trunk swers. Greeley & Hansen, 220 S. State St., Chicago 4, Ill., engrs. Bid date changed. CD 7/25.

LOW BIDDERS

S. C., Rock Hill—City, Aug. 12, sanitary sewer imprvs., from A. H. Guion & Co., Wilkinson Blvd., Charlotte, N. C., **$806,559.** CD 7/13.

CONTRACTS AWARDED

●**Ill., Chicago**—City, Dpt. Purchases, Contracts & Supplies, City Hall, rein.-con. main drain S. Ashland Blvd. to S. Desplaines Sect. Congress St., 2425-1-D, West Route Superhighway, to John C. Tully Co., 33 N. La Salle St., Zone 2, **$1,131,400.** Bids 7/21, awarded 8/5. CD 7/26, under LB.

La., Gretna—Sewer Dist. 1, Jefferson Parish, Gretna, sewage treatment plant addns., to D. D. Pittman Contg. Co., 3025 49 St., New Orleans, **$336,995.** Bids 8/10. CD 7/15.

N. C., Spindale—Town, sanitary sewer imprvs. to Boyd & Goforth, Inc., Pineville Rd., Charlotte, **$98,723.** Bids 8/2. CD 7/15.

Ore., Portland — City, City Hall, Glisan Greeley unit of city sewerage sys., to General Constr. Co., 4850 N. W. Front St., **$893,950.** Bids 8/2, awarded 8/11. CD 8/10, under LB.

BRIDGES

BIDS ASKED

STATE HIGHWAY LETTINGS

August 30
Maryland
North Carolina
September 1
Virginia
September 2
Alabama

Washington
September 8
California
September 9
Pennsylvania
September 15
California

August 29

Ont., Mimico—E. R. Logie, 450 Union Station, Toronto, Church St. Subway exten. and 18 St. Subway exten., for Canadian National R. R., B. Wheelwright, ch. engr., 360 McGill St., Montreal. CD 4/25/45.

LOW BIDDERS

Kentucky—State Hy. Dpt., Frankfort, Aug. 12, flooring bridge over Green River, at Aberdeen, Morgantown-Hartford Rd., R 125 (2), S.P. 16-36, Butler Co., from Harry O. Wise, Lexington, **$135,336.** CD 7/28.

●**N. Y., New York**—Triborough Bridge & Tunnel Auth., G. E. Spargo, genl. mgr. and secy. Administration Bldg., Randall's Island, Zone 35, Aug. 12, pedestrian bridge over Harlem River connecting E. 103 St. with Wards Island, Manhattan, Contr. WI-1, substructures and approach ramps from Grow Constr. Co., Inc., Pier 41, East River, **$838,000;** Contr. W-2, superstructure from American Bridge Co., 71 Broadway, **$1,178,584.** CD 6/30.

●**North Carolina**—State Hy. & P. Wks. Comn., Raleigh, Aug. 16, bridge over Neuse River on U. S. 17 at New Bern, 1.023 mi. Proj. 2130, Craven Co., from Bowers Constr. Co., Box 1706, Raleigh, **$1,137,224.** Est. $1,000,000. CD 7/29.

Virginia—State Hy. Dpt., Richmond, Aug 16, 275 ft. overpass, approaches at Southern R. R., 3 mi. south of Lynchburg, U. S. 29, Campbell Co., from E. F. Blankenship, 426 Arbutus Ave. S. E., Roanoke, **$107,028;** 296 ft. bridge over Jackson River 2 mi. south of Covington, Secondary Route 647, Alleghany Co., from Harvey H. Stewart, 1200 S. Graham St., Charlotte, N. C., **$58,465.** CD 8/1.

Wash., Allentown — King Co., County-City Bldg., Seattle, Zone 4, Aug. 15, steel, concrete bridge over Duwamish River, from T. N. Buchan Co., 835 W. 48 St., Seattle, **$160,301.** Est. $125,000. CD 8/4.

CONTRACTS AWARDED

●**New York** — Bureau Contracts & Accounts, Albany, construct steel viaduct, approaches on 0.4 mi. Bronx River Parkway, exten. north from E. 180 St., Bronx Co., to Cayuga Foundation Corp., 30 Vesey St., New York, **$2,361,551.** Bids 6/22. CD 6/24, under LB.

●**New York** — Bureau Contracts & Accounts, Albany, 2 grade separation structures carrying Broadway and Cross St. over tracks of New York Central R. R. at new locations in village of Hawthorne, Westchester Co., to A. E. Ottaviano, Inc., Croton-on-Hudson, **$939,585.** Bids 6/8. CD 6/10, under LB.

Ont., Toronto — Municipality, in connection with Canadian National R. R., 360 McGill St., Montreal, wid'n. 30 ft. subway on waterfront viaduct on east side of Don River south of Queen St., to A. E. Rule, Ltd., 1109 Millwood Rd., Approx. **$342,000.** CD 3/3/48.

STREETS AND ROADS

BIDS ASKED

STATE HIGHWAY LETTINGS

August 30
Minnesota
North Carolina
August 31
Ohio
September 2
Alabama

Washington
September 7
California
September 9
Pennsylvania

September 9

†**Michigan**—Bureau Pub. Roads, General Services Admin., City Hall, Iron River.

Iron and Houghton Counties—constructing 12.079 mi. Michigan Forest Hy. Proj. No. 16-A2, B2, C2, D2, E2, F2 and G, Part 2. Plans deposit $10.

Colorado—State Hy. Dpt., Denver, Aug. 11, stabilizing, oil processed surf. 11.343 mi. State Hy. 13, between Craig and Meeker, Colo., Proj. F 018-1 (4), Moffat and Rio Blanco Counties, from Peter Kiewit Sons Co., 1960 South University St., Denver, **$142,648,** Est. $165,972. CD 8/5.

Colorado—State Hy. Dpt., Denver, Aug. 12, grading, structures, oil processing 0.407 mi. State Hy. 72 from approx. 8 mi. northwest of Arvada and exten. north, Colo. Proj. SG 0086 (1), Jefferson Co., from L. J. Hesser Constr. Co., Greeley, **$69,423.** Est. $79,386. CD 8/5.

Delaware—State Hy. Dpt., Dover, Aug. 10, 24 ft. c. conc. 2.319 mi. Newark-Limestone Rd., Sect. 2, F-166 (6), Contr. 1000, New Castle Co., from James Julian, Elsmere, **$412,248.** CD 7/20.

Idaho — State Hy. Dpt., Boise, Aug. 12, crushed rock surf. 12.258 mi. Bancock Hy. Power Co., from T. J. Johnson, Ogden, Utah, **$129,828;** b. conc. 5.014 mi. Hayden Junction West Rd., furnishing crushed grav. stock piles, near Garwood and Twin Lakes, Kootenai Co., from Stone & Tlaut, Spokane, Wash., **$63,873.** CD 8/5.

Kentucky—State Hy. Dpt., Frankfort, rejected bids July 22, traffic bound limestone 7.306 mi. Monticello-Gregory Rd., RS 116-179, L.B. **$68,739;** traffic bound limestone 1.319 mi. Gregory-Pueblo Rd., RS 116-199, L.B. **$65,121;** traffic bound limestone 12.038 mi. RS 116-70, RS 116-179, RS 116-199, Total Combined Bid, L.B. **$197,930;** traffic bound limestone 3.413 mi. RS 116-79, Bethesda-Tenn. State Line Rd., L.B. **$75,315,** all foregoing Wayne Co.; traffic bound limestone 1.803 mi. Waterview-Mud Camp-Tompkinsville Rd., RS-29-147, Cumberland Co., L.B. **$66,153;** traffic bound limestone 7.140 mi. KY 15-Hazel Green Rd., RS 119-183, Wolfe Co., L.B. **$60,143;** traffic bound 11.916 mi. Midland-Yale (Licking River) Rd., RS 6-164, Bath Co., L.B. **$141,420;** traffic bound limestone 13.18 mi. Webbville-Blaine Rd., RS 64-253, Lawrence Co., L.B. **$229,156.** CD 8/1, under LB.

Kentucky—State Hy. Dpt., Frankfort, Aug. 12, traffic bound limestone 3.56 mi. Cawood-Smith-Browneis, SP 48-108, S 164 (1), Harlan Co. and traffic bound limestone 7.87 mi. Combined bid RS (47-719) (47-659) Hardin Co., from Ballard & Hamilton, Bardstown, **$72,623** and **$70,095** respectively***traffic bound limestone 5.829 mi. Booneville-Buckhorn Rd., SP (95-116) (13-247) S 138 (2), Breathitt and Owsley Counties, from L. M. Hart Constr. Co., Lexington, **$191,854*****traffic bound limestone 5.798 mi. Hardinsburg-Meeleyville Rd., SP 14-213 S 107 (2) Breckinridge Co., from Fount Crow, Ltd., Beaver Dam, **$144,730***** traffic bound limestone 7.579 mi. Bardstown-Bardstown-Junction Rd. SP (15-334(90-345) S 312 (2) Bullitt and Nelson Counties, from Highland Constr. Co., Inc., 644 Baxter St., Louisville, **$177,758*****bit. 10.964 mi. Manchester-Booneville Rd., S 397 (3), SP 26-25, Clay Co., from Allan-Codell Co., Inc., Winchester, **$158,829*****traffic bound 2.12 mi. Holly Fork Rd., RS 103-262, Rowan Co., from Kiser Constr. Co., Olive Hill, **$51,182*****traffic bound limestone 4.924 mi. Old Olga-Creelsboro Rd., RS 104-238 (1) Russell Co., from Nally & Gibson, Springfield, **$69,992*****traffic bound limestone 1.956 mi. SP (54-540)(117-589) KY 109-US 41 Relief Rt. at Providence S 182 (1), Hopkins and Webster Counties, from L. G. Arnold, Inc., Eau Claire, Wis., **$51,437*****traffic bound limestone 9.006 mi. Pleasant Ridge-Daviess Co. Line Rd., RS 92-404, Ohio Co., from W. F. Robinson & Son, Owensboro, **$118,847***** traffic bound limestone 6.058 mi. Forks of Elkhorn-Stamping Ground Rd., RS 37-565, Franklin Co., from Fuller-Davies Co., Covington, **$86,346*****traffic bound limestone 5.675 mi. Browns Creek Rd., RS 118-740, Whitley Co., from Winston Ford Co., Prestonsburg, **$73,104** ***traffic bound limestone 10.24 mi. Combined Bid RS (5-392) (5-492)1) (5-492 (2), Barren Co., from J. F. Pace Constr. Co., Marrowbone, **$73,702*****traffic bound limestone 8.362 mi. Davis Mill Rd. (Elkton-Trenton Rd.) RS 110-466, Todd Co., from Mulligan Bros., Greenville, **$64,591*****traffic bound limestone 5.53 mi. Owenton-New Liberty Rd., RS 94-373, Owen Co., from Capitol Excavating Co., Augusta, **$50,962.**

Louisiana—State Hy. Dpt., Baton Rouge, Aug. 10, grading, small drainage structures, repairing timber bridges, bit. 10.799 mi. Coushatta-Ringgold Hy., State Rt. 90, S.P. 27-01-03, Red River Parish, from Well Contg. Co., Box 189, Natchitoches, **$182,531*****shaping roadway, small drainage structures, grav. base course, 6.001 mi. Newlight-Ashland Hy., State Rt. 48, S.P. 36-05-05, and 180-01-04, Tensas Parish, CD 7/18, and shaping roadway drainage structures, repairing timber bridges, aggregate type base course, bit. 6.306 mi. Lillie-Farmville Hy., State Rt. 411, S.P. 154-03-06, Union Parish, CD 7/26, from Henry & Hall, Natchitoches, **$129,204** and **$77,384** respectively.

North Carolina—State Hy. & P. Wks. Comn., Raleigh, Aug. 16, traffic bound macad. wid'n. and bit. conc. binder course and surf. course 10.53 mi., Part 1, from junction U.S. 70 to Junction N. C. Route 81, Part 2, from junction N. C. 81 southeast 10 mi., Betterment Sect. 10-6-88-150, Buncombe Co., from Asheville Paving Co., Technical Bldg., Asheville, **$126,971** est. $150,000-$175,000***sand asph. surf. or bit. conc. surf. course 14.8 mi. U. S. 117 from Goldsboro to Wayne Co. line via Mt. Olive on U. S. Route 117, Betterment Sect. 4-6-39-123, Wayne Co., from Barrus Constr. Co., Box 561, Kinston, **$56,756** est. $50,000-$75,000. CD 8/10.

Texas—State Hy. Comn., Austin, Aug. 16, from R. W. McKinney, P.O. Box 190, Nacogdoches, flexible base, asph. stabilized and double asph. surf. tr. 2.954 mi. Hy. 205, C-451-4-3, Rockwall Co. **$144,438** est. $154,000; reconditioning flexible base 19.456 mi. Hy. FM 787, C. 813-2 and 1-1, and 3, Hardin and Liberty Counties, **$71,726** est. $75,000; grading, structures, roadbed tr. and single asph. surf. tr. 8.241 mi. Hy. FM 404, S. 1008 (3), Calhoun Co. **$114,069** est. $120,000***from E. W. Hable & Sons, Corsicana, flexible base and single asph. surf. tr. 5.433 mi. Hy. FM 312, V. 492-2-2, Wood Co., **$73,994** est. $72,000***from H. R. Henderson & Co., P.O. Drawer 313, Marshall, flexible base, single asph. surf. tr. 8.901

mi. Hy. FM 945, S. 1366 (1), San Jacinto Co. **$65,324** est. $70,000***from Houston Clinton, Box 542, Waco, flexible base, base preservative 33.65 mi. Hy. RM 93, Burnet, Blanco and Travis Counties. **$231,434** est. $225,000. CD 7/27, 8/1 and 8/4.

Virginia—State Hy. Dpt., Richmond, Aug. 16, macad. 1.86 mi. at Concord to eliminate curves with 35 m.p.h. maximum safe speed, U. S. 460, Appomattox and Campbell Counties, from Perkins-Barnes Constr. Co., Blackstone, and Adams & Tate Constr. Co., 2725 Roanoke Ave., Norwich, Roanoke, **$112,691*****c. conc. 2.02 mi. Shirley Hy. south of Route 236, Route 350, Fairfax Co., from T. E. Ritter Corp., 426 W Yorke St., Norfolk, **$157,016*****grading, hardsurf. 5.11 mi. Secondary Route 707 from Rivercombs Corner to the Culpeper Co. line, Rappahannock Co., from Richard F. Kline, Frederick, Md., **$81,622*****grading, hardsurf. 8.2 mi. Secondary Routes 633 and 634, from U. S. 23 at Peaks Store to Route 72, Wise and Dickenson Counties, from Sam Finley, Inc., 1615 Cleveland Ave. S. W., Roanoke, **$95,445*****grading, hardsurf. 7.21 mi. Secondary Routes 651 and 609 from U. S. 58 west of Courtland to Route 653, Southampton Co., from Virginia Eng. Co., Newport News, **$68,354.** CD 8/1, 8/2, and 8/5.

CONTRACTS AWARDED

+Oregon — Bureau Public Roads, General Services Admin., Broadway and Oak Bldg., Portland, regrading, surf. 10 mi. Hy. U. S. 395, Umatilla National Forest east of Ukiah, Umatilla Co., to Rogers Constr. Co., Route 15, Box 231, Portland, **$249,472.** Bids 8/9. CD 8/1.

Tex., San Antonio—Bexar Co., Courthouse, reconstructing, repaving, grading, drainage, Precinct 1, force account, **$95,000.** Jimmie Knight, c/o owner, engr. CD 7/5.

Alberta—Province of Alberta, Edmonton, grading 17 mi. road north from Vermilion, Vermilion, to F. R. Gibb & Co. Ltd., Medicine Hat, **$61,795*****17 mi. road constr. from Castor to the Battle River, to Assiniboia Eng. Co. Ltd., 301 Lessen St., Calgary, **$66,465*****grading between Cardston and Carway to Thode Constr. Co. Ltd., Edmonton, **$69,534.** Grand total $197,794. CD 12/3/43.

Man., Winnipeg—Municipality, lane pavements, street wid'n. and concrete sidewalks, street pavement programs addn., own forces, **$310,600.** W. D. Hurst, city engr.

EARTHWORK, WATERWAYS

BIDS ASKED

August 30

+New Jersey—U. S. Eng., 120 Wall St., New York, 5, N. Y., maintenance dredging Passaic River, Center St. Bridge to Nairn Linoleum Works, Serial No. CIV-ENG-30-075-50-13.

August 31

+Louisiana—U. S. Eng., foot of Prytania St., New Orleans, approx. 430,000 cu. yd. hydraulic earthwork for enlargement East Atchafalaya Basin Protection Levee, Inv. 50-42, St. Martin Parish.

September 1

+Iowa and Nebraska—U. S. Eng., 1709 Jackson St., Omaha, 2, Neb., emergency repair or strengthening levees along left and right banks of Missouri River, Harrison Co., Ia., and Washington Co., Neb., Serial No. CIV-ENG 250-066-50-39.

September 2

Neb., Wisner—Wisner Drainage Dist., Wisner, pilot channel for drainage district, $32,076. Henningson Eng. Co., Standard Oil Bldg., Omaha, engr.

September 7

+Arizona and Nevada—Bureau Reclamation, Dpt. Interior, Davis Dam, Nev., installing electrical and hydraulic machinery and appurtenant work, erecting steel structures for Davis Dam Power Plant and Switchyard, Davis Dam Proj., Spec. 2733. Extended date. CD 7/19.

September 9

+Washington—U. S. Eng., 628 Pittock Block, Portland, 5, Ore., levee imprv., reinforcing approx. 3.3 mi. levee and construct approx. 0.15 mi. dumped stone revetments between Stations 81 plus 56 to 262 plus 56 in Cowlitz Co. Consolidated Diking Imprvt. Dist. 1, Longview, Cowlitz Co., CIV-ENG-35-026-50-70.

LOW BIDDERS

Ky., Clermont—Isaac W. Bernsheim Foundation, c/o low bidder, earth dam in Bernsheim Forest, from Breslin Constr. Co., 1801 S. Brook St., Louisville, **$141,012.**

+Louisiana—U. S. Eng., foot of Prytania St., New Orleans, Aug. 11, removal and disposal approx. 5,500,000 cu. yd. material from Calcasieu River and Pass, Calcasieu and Cameron Parishes, Serial No. Eng., 50-1, from Great Lakes Dredge & Dock Co., 122 S. Michigan St., Chicago, Ill., **$645,150.**

+New York and New Jersey—U. S. Eng., 120 Wall St., New York, Zone 5, cancelled bids to have been opened Aug. 23, dredging approx. 905,400 cu. yd. place measurement of all material except ledge rock from New York and New Jersey Channels, Sect. 3, Areas 1 to 6, Serial No. CIV-ENG-30-075-50-5. CD 8/15.

+Oregon—U. S. Eng., 19 E Poplar St., Walla Walla, Wash., Aug. 10, furnishing, installing 11 lower gate leaves for McNary spillway Dam on Columbia River, Eng-45-164-49-117, from Willamette Iron & Steel Corp., 2860 N. W. Front St., Portland, **$396,733.** CD 7/26.

●Pennsylvania—Dpt. Forests & Waters, Education Bldg., Harrisburg, Aug. 15, dredging Schuylkill River between Black Rock Dam and Norristown, from American Dredging Co., 12 S. 12 St., Phila., **$2,210,830.** CD 8/11.

CONTRACTS AWARDED

La., Amite—Gravity Drainage Dist. 4, Tangipahoa Parish, Amite, gravity drainage sys., incl. excavation and clearing, to W. A. Aldrich & Co., Box 1751, Baton Rouge, **$172,506;** bridges, to Anderson Constr. Co., Gloster, Miss., **$36,953.** Awarded 8/1.

Wash., Yakima—City, City Hall, 20 mi. 3- to 16-in. steel, c. i. pipe for irrigation projects, 3 and 5 in. c. i. pipe, to American C. I. Pipe Corp., 1411 4 Ave. Bldg., Seattle, Zone 1, **$53,712;** 4, 6 and 8 in. pipe, to Pacific States C. I. Pipe Co., Provo, Utah, **$53,468.** Bids 8/1.

AIRPORTS AND AIRBASES

BIDS ASKED

September 12

Calif., San Jose—HANGARS—City, 175 W. San Carlos St., hangars for Municipal Airport. Approx. $50,000. Plans deposit $5. CD 10/16/44.

LOW BIDDERS

Pa., Phila. — AIRPORT IMPRVS. — Dpt. P. Wks., City Hall Annex, grading, paving, Phila. International Airport, from Union Paving Co., Broad and Stiles Sts., **$156,883.** A. Zane Hoffman, c/o owner, ch. engr. CD 2/19/46.

CONTRACTS AWARDED

Man., Fort Churchill—HANGAR—Canadian Commerce Corp., 70 Lyon St., Ottawa, Ont., hangar, etc. at Army camp, and mechanical equip. sect. and approaches, to Foundation Co. of Canada, Ltd., 1900 Sherbrooke St. W., Montreal, Que., Approx. **$915,000.**

PUBLIC BUILDINGS

BIDS ASKED

August 29

N. B., McAdam — WAREHOUSE — New Brunswick Liquor Control Bd., P. O. Box 490, Fredericton, concrete, steel, brick liquor warehouse. H. Claire Mott, St. John, archt.

August 31

Colo., Denver—SCHOOL—School Dist. 1, 414 14 St., 3 story, L-shaped, 44x92 ft. and 85x129 ft. Newlon School, Approx. $250,000. Gordon D. White, 615 Columbine St., Denver, archt. and eng.

Pa., Media — AUDITORIUM — Upper Providence School Dist., R. D. 1, Media, auditorium, gymnasium and school wing. $250,000. Lawrie & Green, 321 N. Front St., Harrisburg, archts. CD 2/21/47.

September 1

N. Y., Tottenville—FIELD OFFICE—At office Chief Engr. Port of New York Auth., 111 8th Ave., New York, Zone 11, field office of the Outerbridge Crossing, Contr. AK-3. Plans deposit $10.

September 6

Idaho, Nampa—DORMITORIES—State Dpt. P. Wks., Boise, 2 story, brick, rein.-con. male and female dormitories, at State Colony, $265,000 each. Wayland & Fennell, Idaho Bldg., Boise, archts.

La., Sulphur — SCHOOL — Calcasieu Parish School Bd., Lake Charles, Junior High School.

September 8

Fla., Jacksonville—SWITCHING STATION —City, City Hall, completing Georgia Streu Switching Station for Jacksonville Power Transmission Controls, (Owners Adv. No. 2-2445). Plans deposit $3. Reynolds, Smith & Hills, 227 Park St., engr. CD 2/12/47.

N. J., Mullica Hill — SCHOOL — Harrison Twp. Bd. Educ., Mullica Hill, school. $300,000. Harold H. Klaisz, 7 N. Maple Ave., Woodbury, archt. CD 2/11.

September 12

Fla., West Palm Beach — JAIL — Palm Beach Co., jail. Plans deposit $50. Clarke, Nevins & Scoville, First Federal Bldg., archt.

Bids Asked

●N. Y., Schenectady — ADMINISTRATION BLDG. — U. S. Atomic Energy Comm., c/o General Electric Co., River Rd., administration bldg., fire station, maintenance shop, carpenter and machine shops, roads and utilities at Knolls Atomic Power Laboratory at West Milton, Saratoga Co., near here.

LOW BIDDERS

Mass., Norton—SCHOOL—Town, Bd. Selectmen, Town Hall, rejected bids June 30, 2 story, bsmnt, brick, steel, concrete school, 1 story wings, L. B. **$325,000.** **(Correction**-status). CD 7/28, under CA.

●Tenn., Knoxville—SCHOOL—City Bd. Educ., Knoxville, Aug. 11, Fulton High School, from Foster & Creighton Co., American Natl. Bank Bldg., Nashville, **$1,574,700.**

Va., Pearisburg—HOSPITAL — Comrs. Giles Co., Pearisburg, Aug. 10, Giles Memorial Hospital, from English Constr. Co., Altavista, **$628,700.** CD 7/15.

CONTRACTS AWARDED

●+Ala., Tuskegee—HOSPITAL—Veterans Admin., Vermont Ave. between H and I Sts. N.W., Wash. 25, D. C., 100 bed general-medical-surgical hospital addn., to Batson-Cook, West Point, Ga., **$1,167,148.** CD 7/28, under LB.

Calif., Fresno — SCHOOL — Fresno Bd. Educ., 2348 Mariposa St., Yosemite Junior High School, to Harris Constr. Co., Box 190, Fresno, **$514,349.** Bids 8/11. CD 7/20.

Colo., Pueblo—TECHNICAL—Pueblo Junior College, Pueblo, general contract 1 story, 55x394 ft., brick, vocational technical bldg., with two wings each, 60x255 ft. separate bldg. 60x178 ft. between wings, to Howard C. Whitlock, 815 W. 24 St., **$414,850**. Est. $400,000.

●+La., New Orleans—HOSPITAL—U. S. Eng., foot of Prytania St., 10 story main bldg., U. S. Veterans Admin. Hospital, to Robert E. McKee, 2708 Inwood Rd., Dallas, Tex., **$7,640,000.** Bids 8/9, awarded 8/17. CD 8/4, under LB.

N. Y., Brooklyn—OFFICE CONNECTIONS—Bd. Transportation, 250 Hudson St., New York, Zone 13, construct connections to mezzanine and for revenue transfer, Central Office Bldg., Proj. T-5, to Lewis & McDowell, Inc., and Lopier Constr. Corp., 285 Madison Ave., New York, **$528,399.**

Tenn., Martin—AGRICULTURAL—University of Tennessee, Junior College, Martin, agricultural bldg., to Seth E. Giem & Assoc., Porter Bldg., Memphis, **$587,099.** Bids 8/4. CD 8/10, under LB.

●Tex., Houston—DORMITORIES—University of Houston, 765 Fannin St., five masonry dormitories, to R. F. Ball Constr. Co. Inc., 3200 W. Dallas St., **$2,133,127;** heating sys. and air-conditioning sys., plumbing for 5 dormitories to H. F. Watson Co., 4911 Stimson St., **$690,100.** Bids 7/14. CD 7/25, under LB.

Alta., Edmonton — DWELLINGS — Central Mortgage & Housing Corp., 70 Lyon St., Ottawa, Ont., 66 dwellings, to Shoquist & Wicklund, Constr. Co. Ltd., Edmonton, Approx **$600,000.**

●Alta., Edmonton — DWELLINGS — Central Mortgage & Housing Corp., 70 Lyon St., Ottawa, Ont., 184 dwellings, between 58 and 62 Sts. and between 118 and 123 Aves., to Bennett & White Ltd., Edmonton, Approx. **$1,500,000.** Bids 7/29. CD 7/26.

●Alta., Calgary—HOUSING—Central Mortgage & Housing Corp., 400 Kensington Bldg., Winnipeg, Man., approx. 250 house units and 50 dwellings, at Currie Field for D.N.D. (R.C.A.F. personnel), to Bird Constr. Co. Ltd., Sargent and Erin Sts., Winnipeg, Man., Approx **$1,750,000** and Approx. **$350,000** respectively. Bids 7/18. CD 7/11.

●Alta., Namao—DWELLINGS—Central Mortgage & Housing Corp., 70 Lyon St., Ottawa, Ont., 100 dwellings at airport, to Bennett & White, Ltd., Edmonton, Approx. **$1,000,000.** CD 6/28, under Airports, etc.

Labrador, Goose Bay—HOUSING—Canadian Commerce Corp., 70 Lyon St., Ottawa, Ont., houses for permanent married quarters at R. C. A. F. Airport, to Terminal Constr. Co., Ltd., Dominion Square Bldg., Montreal, Que., Approx. **$475,000.**

●Man., Fort Churchill — WAREHOUSE, etc. —Canadian Commerce Corp., 70 Lyon St., Ottawa, Ont., warehouse, central heating plant, one 1 m. gal. oil tank, etc. at Army Camp and 14 married quarters, supply and install two A300 Ames heating boilers at existing plant at Army Station, to Foundation Co. of Canada, Ltd., 1900 Sherbrooke St., W., Montreal, Que., Approx. **$935,209** and **$960,000** respectively.

Ont., Alliston—South Simcoe High School Area Bd., W. G. E. Cumberland, secy., 2 story, bsmnt., rein.con. brick high school to Bennett-Pratt, Ltd, 5 Maple Leaf Dr., Weston, Approx. **$428,000.** Bids 7/6. CD 6/23.

●Ont., Ottawa—HOUSING—Central Mortgage & Housing Corp., 39 5 Fleet St. W., Toronto, 200 houses, Rockcliffe Airport Tenders Rockliffe (D.N.D.) Non Urban No. 1/49, to Hill-Clark Francis Ltd., New Liskeard, Approx. **$1,300,000.** Bids 8/3. CD 7/18, under Airports, etc.

Ont., Trenton—HOUSING—Central Mortgage & Housing Corp, 395 Fleet St. W., Toronto, 250 houses at airport D.N.D. Non Urban Proj. 1-49, to Russell Constr. Co., Ltd., Harbour Comrs. Bldg., Toronto, Approx. **$1,700,000.** Bids 8/4. CD 7/21, under Airports, etc.

COMMERCIAL BUILDINGS

BIDS ASKED

August 31

Ga., Atlanta — APARTMENT—Confederate Acres, Inc., c/o Moscowitz, Willner & Millkey, archts., 1000 Peachtree St. N. E., 52 apartment units. Plans deposit $10.

●Pa., Erie—HOSPITAL—Hamot Hospital, 2 and State Sts., 10 story, brick hospital addn., modernization, 200 addnl. beds. $1,800,000. Johnson & Johnson, Commerce Bldg., archts.

September 6

Tex., Fort Worth—SHOPPING CENTER—Westcliff Shopping Center, 3600 Bellaire Dr. W., shopping center. $300,000. Joseph H. Gaylord & Co., 503 Neil P. Anderson Bldg., engrs. CD 8/17.

Bids Asked

●Pa., Lansdowne—APARTMENT—Wildman Arms Apartment, 86 W. Baltimore Ave., apartment development, 86 W. Baltimore Ave. $2,500,000. Former contract cancelled. Aaron

Colish, 117 S. 17 St., Phila., archt. CD 5/24, under CA.

●**Tex., Galveston**—DWELLINGS—W. R. Reid, 4002 Timon Blvd., Corpus Christi, 100 dwellings, north end of flats. $600,000; 82 dwellings, south end of North flats. $492,000. Reynolds & McCleary, 3401 N. Shepherd St., Houston, archts. CD 8/16.

Tex., Houston—HOTEL—Michael DeGeorge, Casper DeGeorge Estate, Ambassador Hotel, 3 story 64 room hotel. $300,000. Garrison King, 4615 Fannin St., archt. R. P. M. Co., Jenson Arcade Bldg., Pasadena, mechanical engr. CD 6/14, under LB.

●**Tex., Houston** — APARTMENTS — Carl C. Sharp, Bayou Apartments, Inc., 6604 Mercer St., 296 apartment units, $1,500,000; 70 apartment units, $500,000.

Tex., Port Arthur—APARTMENTS—G. L. Christian, 1909 San Jacinto St., Houston, 50 apartment units to be known as Griffing Park Apartments, 9 Ave., $400,000; 30 apartment duplex units across streets from St. Marys Hospital, $265,000. CD 8/17.

SOON LETS CONTRACT

Ala., Birmingham — APARTMENT—Center Court Apartments, c/o Pembleton & Mims, archts, Title Guarantee Bldg., Birmingham, soon lets contract 56 apartment units, Approx. $250,000.

Ala., Birmingham — APARTMENT—Forrest Court Apartments, c/o Pembleton & Mims, archts., Title Guarantee Bldg., soon lets contract 40 apartment units. Approx. $250,000.

N. J., Millville — BUILDING—Millville Y. M. C. A. 34 Cedar Ave., soon lets contract Y. M. C. A. bldg. $250,000. Walter Custer, Giles Rd., Bridgeton archt. CD 4/27.

Pa., Phila.—HEALTH CENTER—Mens Apparel Industry & Amalgamated Clothing Workers of America, 2115 South St., soon lets contract health center. $700,000. Louis Magaziner, 1701 Walnut St., archt. CD 10/41.

CONTRACTS AWARDED

Calif., Los Angeles—DWELLINGS—Southwest Olympic Homes, Inc., 407 Commercial Center, Beverly Hills, 87 frame, stucco dwellings, to United Western Builders, Inc., 407 Commercial Center, Beverly Hills, **$548,100.**

●**Colo., Denver** — APARTMENTS—University of Denver, Bd Trustees, Denver, general contract seven 3 story, bsmnt., 252 unit, 36 unit each bldg., brick, apartments and 1 story bsmnt., 100x181 ft. concrete, reinforced steel community bldg., to N. G. Petry Constr. Co., 3144 Navajo St., Approx. **$2,245,000.** Bids 4/22. CD 3/3.

●**D. C., Wash.**—APARTMENT—Jerry Maiatico, Woodward Bldg., 8 story, bsmnt., subbsmnt., 312-unit brick, concrete luxury apartment, 2122 Massachusetts Ave. N. W. Owner builds. Approx. **$2,500,000.** Matthew G. Lepley, 5230 Nebraska Ave. N. W., archt.

●**Fla., Jacksonville** — HOUSING — J. Glover Taylor, Inc., 17 N. Ocean St., Zone 2, housing for colored people, incl. 206 two bedroom family units, to George D. Auchter Co., foot of E. 56 St., Zone 1, **$1,123,751.** Est. $1,100,000. Awarded 8/12. S. Ralph Fetner, Rogers Bldg., Zone 1, archt.

Fla., Orlando — HOSPITAL—Orange Memorial Hospital, Orlando, hospital addn., to Stevens & Sipple, Orlando, Approx. **$500,000.** CD 5/2/46.

●**Ga., Macon** — RESIDENTIAL DEVELOPMENT—Knox Corp., Thomson, residential development. Owner builds. Approx. **$1,000,000.**

●**Ill., Chicago**—STORE—Marshall Field & Co., State and Randolph Sts., Zone 1, major alteration department store, to Pepper Constr. Co., 155 N. Calrk St., Zone 1, **$2,000,000.** James A. Wares, c/o owner, archt.

●**Ill., Chicago** — APARTMENT — Owner, c/o Leo S. Hirschfeld, 120 S. La Salle St., 16 story, brick, rein.-con., co-operative apartment, Astor and Bank Sts., separate contracts, **$1,750,000.**

●**Nev., Reno**—HOTEL—Reno Securities Co., 206 N. Virginia St., 3 story, bsmnt., rein.-con., structural steel Riverside Hotel addn., to M. J. Brock & Sons, Inc., 2894 Rowena Ave., Los Angeles, Calif., Approx. **$1,500,000.** DeLongchamps & O'Brien, 160 Chestnut St., and Frank Green, 1515 N. Chevy Chase St., Glendale, Calif., archts. CD 10/5/44.

●**N. J., Pleasantville**—APARTMENT DEVELOPMENT—Glendale Manor Apartments, Inc., c/o contractor, apartment development, Shore Rd., to Bleznak Bros., Inc., 814 N. Broad St., Woodbury. **$1,309,000.** Edwards & Green, Broadway and Carman St., Camden, archts.

N. Y., Lake Placid—HOSPITAL—Lake Placid Memorial Hospital, Town Hall, P. O. Box 588, hospital, to I. & O. A. Slutsky, Hunter, Approx. **$600,000.** Bids 6/15. CD 6/2.

N. Y., New Rochelle—SCHOOL—Iona College, 715 North Ave., preparatory school, to Margotta Constr. Co., 250 N. Washington St., Tarrytown. Est. $500,000. Bids 7/28. CD 7/20.

N. Y., New York—DEPARTMENT STORE—C. & A. Brenninkmeyer, Inc., 526 Fulton St., Brooklyn, 4 story department store, 429 5 Ave., to Turner Constr. Co., 420 Lexington Ave. CD 12/15.

O., Toledo—THEATER etc.—Maumee Valley Amusement Inc., c/o Marvin Lachin, Edison Bldg., design and construction theater and dance pavilion to O. J. Paxton, Newport Ave., Approx. **$250,000.** CD 10/26.

Pa., Mount Lebanon — APARTMENT—Tuscanny, Inc., 666 Washington Rd., Pittsburgh, Zone 16, 6 story, bsmnt., 97x99 ft., brick apartment. Owner builds. **$500,000.** Tennyson & Van Wart, 666 Washington Rd., Pittsburgh, Zone 16, archts.

Pa., Phila.—RESIDENCES—Peter Costello & Sons, Inc., Commercial Trust Bldg., residential development, Pennypack Circle, separate contracts. **$250,000.** David Slott, 7060 Garrett Rd., Upper Darby, archt.

Pa., Phila. — BUNGALOWS — Kingston Homes, Inc., 5501 Torresdale Ave., Bungalow development, Marsden St., etc., separate contracts. **$372,000.** Joe Gahuse, 5606 Lebanon Ave., engr.

Pa., Phila. — OFFICE—Peoples Bond & Mortgage Co., Packard Bldg., office, 1426 Walnut St., to Towne Constr. Co., 1505 Race St., **$250,000.** CD 7/27.

●**Pa., Pittsburgh** — APARTMENT — Marlin Arms, Inc., 5621 Walnut St., 6 story, concrete block, brick, steel apartment, 5345 Centre St., to R. Behrman & L. D. Passell, 5621 Walnut St., Approx. **$2,000,000.** Phillip Friedman, 121 S. Negley St., archt.

Tex., Houston — HOUSING — Alton B. Brewer, 1534 Vermont St., housing, near Lamar High School, own forces. Approx. **$260,000.** CD 8/11.

Tex., Houston — DWELLINGS—Harold P. Hill, 1534 Woodcrest St., 40 dwellings, concrete slab fdn., Crawford addn. Owner builds. Approx. **$250,000.** CD 8/11.

Tex., Houston — RESIDENCES—George B. Shepherd, 3214 Leeland Ave., 48 residences. Owner builds. Approx. **$400,000.** CD 8/11.

Tex., Houston — RESIDENCES — J. H. Weisenberger, Hermann Bldg., 320 residences, Weisenberger City Addn. Owner builds. Approx. **$750,000.** CD 8/11.

Tex., Pasadena—DWELLINGS—Charles R. Olds & Assoc., 3425 University St., Houston, 150 low cost dwellings, on 395 acre tract. Purchase and Hire. **$690,000.** CD 4/8.

INDUSTRIAL BUILDINGS

BIDS ASKED

August 30

Ill., Chicago—BUS TERMINAL—Greyhound Corp., 141 W. Jackson St., 2 story, brick, steel, concrete, stone substructure for bus terminal. Skidmore, Owings & Merrill, 100 W. Monroe St., archts. CD 3/3, under Commercial Buildings.

Pa., Glenside—FACTORY—Prack & Prack, archts., Martin Bldg., Pittsburgh, factory addn. and misc. work, for Harry A. Prock Cabinet Co., Glenside. Approx. $68,000.

August 31

●**N. J., Eagle Point**—PLANT—The Texas Co., 205 E. 42 St., New York, N. Y., Bulk Plant 5, several masonry bldgs., pipe works, etc. $1,000,000. A. L. Andujar, 205 E. 42 St., New York, N. Y., engr.

September 7

●**Pa., Phila.** —PLANT— Supplee-Wills-Jones Milk Co., 523 N. 26 St., Tabor Ave. Plant. $1,000,000. William C. Stohldrier & Robert G. Zetsche, Northcourt Bldg., White Plains, N. Y., archts. The Ballinger Co., 121 N Broad St., assoc. archt. CD 11/5/45.

Bids Asked

●**N. Y., Buffalo**—STAMPING PLANT—Ford Motor Co., 3000 Shaefer St., Dearborn, Mich., 1 story, concrete, steel 1,000,000 sq. ft. stamping plant and supply building in Hamburg Twp., near here. $10,000,000 (with equip. $25,000,000). Albert Kahn Associated Architects & Engineers, Inc., New Center Bldg., Detroit 2, Mich., engr. and archt.

Tex., Fort Worth—GENERATOR SERVICE SHOP—Beard & Stone Electric Co., c/o Wilson & Patterson, archts., Majestic Bldg., generator service shop. $125,000. CD 8/12.

SOON LETS CONTRACT

Ia., Rock Rapids—SERVICE—Lyon Rural Electric Co-operative, Rock Rapids, soon lets contract service bldg. $70,000. Perkins & McWayne, Sioux Falls, S. D., archts.

Pa., Bryn Mawr—SALES and SERVICE—Engineering Consultants, engrs., 843 N. 19 St., Phila., soon lets contract auto sales and service bldg. for Del Mont Motors, Inc., 625 Lancaster Ave. $80,000.

Pa., Northumberland—INDUSTRIAL—Frank M. Bates Assoc., engrs., Bristol, soon lets contract industrial bldg. addn. for L'Aiglon Apparel Co., Inc., Northumberland. Approx. $68,000.

Pa., Pittsburgh—PLANT—Morrison & McClaun, Inc., 2300 Smallman St., soon lets contract 1 and 2 story, 19x253 ft. concrete block food processing plant addn. $75,000. George Simons, 258 Shady Ave., archt.

Pa., Upper Darby—GARAGE, etc.—Main Line Transfer Co., 69 St. Terminal Bldg., soon lets contract garage and office and 2 small bldgs. $500,000. Simon & Boulware, 123 S. Broad St., Phila., archts.

W. Va., Williamson—STATION—Norfolk & Western R.R. Co., A. B. Stone, ch. engr., General Office Bldg., Roanoke, Va., soon lets contract freight station. $450,000. Alex Mahood, L and C Bldg., Bluefield, archt.

Ont., Hamilton — WAREHOUSE, etc.—T. Eaton Co., 190 Yonge St., Toronto, soon lets contract 2 story, part bsmnt., 60x161 ft. warehouse and office, Rebecca St. Approx. $200,000. M. T. Keough, c/o owner, engr.

Ont., Ottawa—WAREHOUSE, etc.—W. E. Woffke, archt., 46 Elgin St., soon lets contract 1 story, bsmnt., 86x118 ft., steel warehouse and office, 35x44 ft. storage pipe shed, Catherine and Lyon Sts., for Crane, Ltd., 148 Bank St., Approx. $130,000.

LOW BIDDERS

Miss., Carthage—WAREHOUSE, etc.—Central Electric Power Assn., Carthage, Aug. 12, warehouse and office, from B. L. Howell & Son, Philadelphia. **$73,820.** CD 8/8.

CONTRACTS AWARDED

Ala., Tuscaloosa—PLANT—The Weatherford Printing Co., c/o Don B. Schuyler, Tuscaloosa, printing plant, to Brice Building Co., 1021 2 Ave. N., Birmingham. Approx. **$75,000.** CD 8/11.

Calif., Los Angeles—LOFT—Elias Autaky, 626 N. Alta Dr., Beverly Hills, 5 story, 60x150 ft. rein.-con., masonry loft, to Fry & Fry, Inc., 6017 S. Figueroa St., **$160,000.** Bids 8/8. CD 8/10.

Calif., Newark—PLANT—Westvaco Chemical Div., Food Machinery & Chemical Corp., Newark, mfg. plant, to United Eng. & Contractors, Inc., Box 1189, Newark, Approx. **$70,000.**

Calif., Sacramento—WAREHOUSE—Carpenter Paper Corp., 1305 Front St., rein.-con. warehouse, to Campbell Constr. Co., 800 R St., Approx. **$60,000.**

Del., Newport—LABORATORY—E. I. du Pont de Nemours & Co., Inc., Nemours Bldg., Wilmington, rayon weaving laboratory, to J. A. Bader & Co., Inc., 923 Market St., Wilmington. **$150,000.**

Fla., Daytona Beach—PLANT—Daytona Coca-Cola Bottling Co., c/o Reynolds, Smith & Hills, archts., 227 Park St., Jacksonville, bottling plant addn., alterations, to McCracken & Berry, Ormond, **$71,200.**

Fla., Miami—SHOP, etc.—Allen-Parker Co., c/o contractor, shop and office, to Frank J. Rooney, 5880 N. E. 4 Ave., Miami, **$70,376.**

Ill., Chicago—PLANT—City Glass Co., 2018 Wabash St., Zone 16, 110x120 ft., steel, brick glass processing plant, to Rogin Constr. Co., 1069 N. Wells St., Zone 10, **$80,000.** Sobel & Stein, 737 N. Michigan St., Zone 11, archts.

Ill., Chicago—PLANT, etc.—Hearst Publishing Co., 8 Ave. and 57 St., New York, N. Y., 2 story, brick newspaper plant and office addn., to Carroll Constr. Co., 333 N. Michigan Ave., Approx. **$800,000.** CD 7/26.

Ia., Cedar Rapids—TURBINE—Iowa Electric Light & Power Co., Security Bldg., turbine bldg., to Abel Howe Co., 1026 3 Ave. S.E., **$333,000.** Howard R. Green Co., Cedar Rapids, engr.

Ky., Louisville—PLANT—Lever Bros. Co., c/o contractor, mfg. plant, to Girdler Corp., 224 E. Broadway, Approx. **$68,000.**

Neb., Lincoln—BUS GARAGE—National City Lines, 616 S. Michigan St., Chicago, Ill., bus garage for Lincoln Traction Co., to Olson Constr. Co., 510 S. 7 St., **$70,000.** Bids 7/29. CD 7/27.

N. J., Riverside—GARAGE—Public Service Co., 80 Park Pl., Newark, 1 story, 65x175 ft. brick, concrete garage, to Laessle Builders, Inc., 117 S. 17 St., Phila., Pa., **$125,000.** CD 6/28.

N. C., Wilmington—LAUNDRY—National Linen Co., c/o contractor, design and construction laundry, to L. B. Jackson & Co., Jackson Bldg., Asheville. Approx. **$200,000.** CD 8/17.

O., Toledo—SALES and SERVICE—Brown Motor Sales, 417 Main St., 1 story T-shaped, 25,000 sq. ft. cement block faced with brick auto sales and service bldg., 901 Front St., to Ruihley & Kuerten, Inc., 316 Pinewood Ave., Approx. **$108,000.**

Pa., Phila.—SHOP—Firestone Tire & Rubber Co., 1620 S. 49 St., brick, masonry shop, to Bargar Constr. Co., Commercial Trust Bldg., Approx. **$68,000.** CD 6/21.

Pa., Phila.—PLANT—Formost Kosher Sausage Co., 519 S. 4 St., masonry packing plant addn., to Wolfe Constr. Co., 17 and Thompson Sts., **$68,000.** Bids 5/31. CD 5/27.

Pa., Pittsburgh—WAREHOUSE—Charles E. Hires Co., 206 S. 24 St., Phila., 1 story, concrete block warehouse, Charlotte St., to W. R. Houggy, Glenshaw. Approx. **$100,000.** Paul Schell, 1112 Clark Bldg., archt.

Tex., Alvin—PLANT, etc.—Southern Warehouse Co., Alvin, rice dryer plant unit, **$75,000;** warehouse, Approx. **$85,000,** own forces. L. Gabert, 1315 Bell St., Houston, archt. on latter project.

Tex., Colorado — City — RECEIVING STATION—Texas Pipe Line Co. & Assoc., Texas Bldg., Houston, receiving station, 12 mi. northeast of here, own forces. **$475,000.**

Tex., Corsicana—STORAGE—Strouble Implement Co., Corsicana, masonry implement storage, display and service, to J. E. Williams, Waco, **$89,115.**

Tex., Thackerville — COMPRESSOR STATION—Lone Star Gas Co., 1915 Wood St., Dallas, compressor station, own forces. Approx. **$175,000.** CD 11/24.

Tex., Victoria—BUILDINGS—E. I. du Pont de Nemours & Co., du Pont Bldg., Wilmington, Del., rein.-con. fdns. for 9 mfg. bldgs. and 4 service bldgs, own forces. Approx **$246,000.** CD 7/28.

Tex., Wichita Falls — PLANT — Chapman Dairy, Wichita Falls, dairy plant. Owner builds. Approx. **$70,000.** Jesse G. Dixon, 913 B Indiana St., archt.

Va., Clarksville—PLANT—Colonial Mills, Inc., Clarksville, mfg. plant imprvs., addns., to C. M. Guest & Sons, Greensboro, N. C. Approx. **$75,000.**

UNCLASSIFIED

BIDS ASKED

August 30

Iowa—HEADQUARTERS BUILDING—Ida County Rural Co-operative, Ida Grove, headquarters bldg. $85,000. W. Beuttller, Sioux City, archt. CD 1/19.

N. Y., New York—BORINGS—Comr. Marine & Aviation, Pier A, North River, foot of Battery Pl., borings at new Pier No. 57, North River, Contr. 2687. **Plans deposit $3.**

Bids Asked

●**Texas** — TRANSMISSION LINES — Lower Colorado River Auth., c/o Max Starcke, Austin, electric power transmission lines radiating from Marble Falls Dam and hydro-electric plant, $1,000,000; electric power transmission lines radiating from Granite Shoals Dam and electric power plant, $1,000,000. CD 4/18.

Tex., Chesterville — PIPELINES — Del Ray Petroleum Co., N. Esperson Bldg., Houston, crude oil pipelines in vicinity proposed refinery. $90,000.

LOW BIDDERS

Ala., Ashville—GAS SYSTEM—City, Aug. 11, natural gas sys., from Harbert Contg. Co., 2337 20 Ave. S., Birmingham, **$49,954.** CD 8/5.

†**Nebraska**—SUBSTATION—Bureau Reclamation, Dpt. Interior, Casper, Wyo., Aug. 10, Gering substation addns., near northern city limits of Gering, just west of State Hy. 29, Missouri River Basin Proj., Spec. 2729, from Long Constr. Co., Billings, Mont., **$79,082.** CD 7/12.

CONTRACTS AWARDED

●†**Colorado**—TUNNELS, etc.—Bureau Reclamation, Dpt. Interior, Bldg. 1-A, Denver Federal Center, Denver, Olympus and Pole Hill Tunnels and access roads, Estes Park, Foothills Power Aqueduct, Colorado-Big Thompson Proj., Larimer Co., Spec. 2722, to Wunderlich Contg. Co., 206 Patterson Bldg., Omaha, Neb., **$4,787,874.** Bids 8/2, awarded 8/10. CD 8/4, under LB.

Georgia—RURAL DISTRIBUTION LINES—Flint Electric Membership Corp., Reynolds, 215.99 mi. rural distr. lines, Tylor, Schley, Crawford, Talbot, Muscogee, and Marion Counties, to Victory Electric Co., 266 St. Michael St., Mobile, Ala., **$179,156.** Bids 8/11. CD 7/28.

Iowa—RURAL DISTRIBUTION LINES—T. I. P. Rural Electric Co-operative, Brooklyn, 287.2 mi. rural distr. lines, Poweshiek Co., to Superior Electric Co., Appleton, Wis., **$339,921.** CD 1/19.

●**Mississippi, Tennessee, Kentucky and Ohio**—OIL PIPELINE—Mid Valley Pipeline Co., (Sun Oil Co.) 1608 Walnut St., Phila. 3, Pa., and Standard Oil Co. of Ohio, 3083½ Broadway, Cleveland, 16, O., Sect. 3B and 4A, 111mi. 22 in. pipeline, Oakland, Miss. to Henderson, Tenn. and Sects. 4B and 5A, 111 mi. 22 in. pipeline, Henderson, Tenn., to Clarksville, Tenn., to Eastern Constr. Co., Mercantile Bank Bldg., Dallas, Tex., ***Sects. 5B and 6A, 111 mi. 22 in. pipeline, Clarksville, Tenn., to Elizabethtown, Ky., and Sect. 7 South, 60 mi. 20 in. pipeline, Hebron, Ky., to point northeast of Eaton, O., to Britton Constr. Co., 401 N. Main St., Fort Worth, Tex. ***Sect. 6B, 111 mi. 22 in. pipeline, Elizabethtown, Ky., to Hebron, Ky., to H. L. Gentry Constr. Co., Jackson, Mich.***Sect. 7 North, 60 mi. 20 in. pipeline from point northeast of Eaton, O., to Lima, O., to Mahoney Constr. Co., Mount Pleasant, Mich. **$20,000,000.** (Part of 1,000 mi. pipeline from Longview, Tex., to Lima, O.). CD 4/25.

Nebraska—RURAL DISTRIBUTION LINES—Twin Valleys Electric Membership Assoc., Cambridge, labor for 143.4 mi. rural distr. lines, Furnas and Harland Counties, to M & M Electric Constr. Co., 7015 Prospect St., Kansas City, Mo., **$71,631.** Bids 6/2. CD 5/20.

N. Y., Astoria—STATION PLATFORMS—Bd. Trasportation, 250 Hudson St., New York, Zone 13, altering station platforms providing BMT operation to Astoria. Contr. UA, to Peerless Constr. Co., 280 Madison Ave., New York, **$115,130.** Bids 8/5.

South Dakota — RURAL DISTRIBUTION LINES—Moreau-Grand Electric Co-operative, Timber Lake, 204.4 mi. rural distr. lines, Dewey Co., to Hallett Constr. Co., Crosby, Minn., **$287,403.** CD 6/17.

●**Texas**—DAMS—Lower Colorado River Auth., c/o Max Starcke, P. O. Box 1153, Austin, hydro-electric flood prevention dams on Colorado River at Granite Shoals and at Marble Falls to Brown & Root, Inc., Box 3, Houston, **$4,373,000** and **$2,953,059** respectively. Bids 8/10. CD 8/15, under LB.

Alta., Stettler—OIL WELL DRILLING—Gulf Oil Corp., c/o J. H. Bevel, genl. agt., Calgary, oil well and gas well drilling in Stettler area and Redwater sector, own forces. **$500,000.**

N. W. T., Cornwallis Island—CAMP—Canadian Commercial Corp., 70 Lyon St., Ottawa, Ont., camp development, to The Tower Co. Ltd., 1411 Stanley St., Montreal, Que., **$212,000.** Dpt. National Defense, Cartier Square, Ottawa, Ont., archt.

Ont., Toronto—WIND TUNNEL—University of Toronto, Simcoe, Hall, Toronto, engine test sheds alterations, wind tunnel, auxiliary works, to A. E. Rule, Ltd., 1109 Millwood Rd., Approx. **$100,000.** Bids 7/29. CD 7/20.

Proposal Advertisements see pp. 60 and 61

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Bids: September 6, 1949 (325)

Furnishing and Delivering Cast Iron Pipe and Cast Iron Fittings

WASHINGTON SUBURBAN SANITARY COMMISSION

Sealed proposals for furnishing and delivering approximately 750 tons of Cast Iron Pipe and Cast Iron Fittings will be received in the office of the Purchasing Agent of the Washington Suburban Sanitary Commission, Hamilton St., Hyattsville, Md. until Tuesday September 6th, 1949 at which time and place they will be publicly opened and read.

Lists of the pipe and fittings may be obtained from W. R. Douglas, Purchasing Agent of the Commission, Hyattsville, Md.

Dwight B. Galt, Chairman
Leland G. Worthington
Warren Browning
Commissioners.

Bids: September 8, 1949 (327)

Foundation Walls for Terminal Building

THE PORT OF NEW YORK AUTHORITY
PORT AUTHORITY BUS TERMINAL
CONTRACT BT-4

Sealed proposals for the construction of the foundation walls for the Port Authority Bus Terminal, between West 40th and West 41st Streets and Eighth and Ninth Avenues, New York City, will be received at the office of the Chief Engineer, The Port of New York Authority, Room 1100, 111 Eighth Avenue, New York 11, N. Y., until 2:00 P. M. Thursday, September 8, 1949, and thereafter in the Auditorium of the Authority at the same address until 2:30 P. M. on the same date, at which latter time and place said Proposals will be publicly opened and read.

Contract documents may be seen at the office of the Chief Engineer, and copies will be furnished upon deposit of $10.00 per set. The deposit will be remitted if the documents are returned in good condition, not later than thirty days after the opening of proposals.

THE PORT OF NEW YORK AUTHORITY
Howard S. Cullman,
Chairman

New York, August 25, 1949

U. S. Government

UNITED STATES DEPARTMENT OF THE INTERIOR, Bureau of Reclamation. Sealed bids (Specifications No. 2767) will be received by Bureau of Reclamation, Denver, Colorado, September 23, 1949, and then publicly opened for furnishing labor and materials and performing all work for the completion of Estes and Marys Lake Power Plants, Colorado-Big Thompson Project, Colorado. The work is situated near the village of Estes Park, Colorado. Principal items are approximately: Installing three power units at Estes Park Power Plant and one power unit at Marys Lake Power Plant, each unit with a turbine, a pressure regulator, a governor, and a generator; installing 33,000 ft. conduit; installing 214,000 ft. conductor; installing heating and ventilating systems in Estes Park and Marys Lake Power Plants; completing architectural finishes in Estes Park and Marys Lake Power Plants; and other work. Time allowed for completion will be 285 days. For particulars, address Bureau of Reclamation, Building 1-A, Denver Federal Center, Denver, Colorado.

MICHAEL W. STRAUS, Commissioner.
(323)

U. S. Government

Bureau of Public Roads, General Services Administration, August 16, 1949. SEALED BIDS will be received at the office of the Bureau of Public Roads, Concord Electric Building, 9-15 Capitol St., Concord, New Hampshire, until 10:00 a.m., E.S.T., SEPTEMBER 16, 1949, for New Hampshire Forest Highway Project No. 8-D, Grafton County, New Hampshire. Length—4.208 miles. The approximate quantities of the more important items are as follows: 142,770 cu. yd. Excavation, 410 cu. yd. Cement Concrete, 14,000 cu. yd. Gravel and 6,495 lin. ft. Sheet Metal Pipe. Minimum wage rates have been fixed as required by law. For plans and specifications, a deposit of $10.00 cash or certified check made payable to the Treasurer of the United States will be required to insure their return within 15 days after the opening of bids. Plans, specifications, and proposal forms may be obtained from the offices of the Bureau of Public Roads, Concord Electric Bldg., 9-15 Capitol St., Concord, New Hampshire, or c/o Acadia National Park Office, Bar Harbor, Maine, or 1440 Columbia Pike, Arlington, Virginia. H. J. Spelman, Division Engineer.

(326)

UNITED STATES DEPARTMENT OF THE INTERIOR, Bureau of Reclamation. Sealed bids (Specifications No. 2762) will be received by Bureau of Reclamation, Anderson Dam, Idaho, September 14, 1949, and then publicly opened for furnishing labor and materials and performing all work for the construction of Anderson Ranch Dam-Mountain Home, 115-kilovolt transmission line, Boise Project, Idaho. The work is situated near Mountain Home, Idaho. The transmission line will be of three-phase, single-circuit, wood-pole, H-frame-type construction with two overhead ground wires and approximately 17 miles long. Time allowed for completion will be 240 days. For particulars, address Bureau of Reclamation, Anderson Dam, Idaho; or Building 1-A, Denver Federal Center, Denver, Colorado.

MICHAEL W. STRAUS, Commissioner.
(324)

(Continued on page 61)

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U. S. Government

(Continued from page 60)

General Services Administration, Public Buildings Administration, Washington, D. C., Aug. 12, 1949—Sealed bids in duplicate for additional story to the United States P. O. Terminal Annex, at Los Angeles, California, (except elevators), will be received until 1.00 P. M., Pacific Standard Time, on September 27, 1949, then publicly opened at 1031 South Broadway, Room 1010, Office of Area Manager, San Francisco 15, California. Bid guarantee is required. If the amount of the contract exceeds $2000, U. S. Standard Form No. 23, Construction Contract, will be used and performance and payment bonds will be required. Upon request one set of Prebid Documents and two sets of drawings and specifications will be supplied without charge to each general contractor interested in bidding on the complete project, all of which must be returned. Additional sets of drawings and specifications may be obtained by general contractors at a charge of $10.00 per set, which will not be refunded. Checks offered as payment must be made payable to the order of the Treasurer, U. S. Upon request and in the discretion of the undersigned one set of drawings and specifications will be furnished to builders' exchanges, chambers of commerce and other similar organizations, with the understanding that the set will be retained on their premises and made available for inspection by any interested sub-contractor or material firm. DESCRIPTION: The present building is reinforced concrete, flat slab construction, with flat roof over present 3rd story; steel windows and steel stud and plaster interior partitions (earthquake construction). Present roof has composition covering. The addition consists of a new 4th story, using the slab in place as the future floor, extension of stair towers, elevator service (elevators under separate contract), extending present stack and new paved landing area on new roof for helicopters. The cost of the work is estimated between six hundred thousand and seven hundred fifty thousand dollars. Bidding material may be obtained at Room No. 507, Lemon Building 1729 New York Ave., N. W., Washington 25, D. C., Phone EXecutive 4900, Extension 2397. W. E. Reynolds, Commissioner of Public Buildings, General Services Administration. (320)

UNITED STATES DEPARTMENT OF THE INTERIOR, Bureau of Reclamation. Sealed bids (Specifications No. 2764) will be received by Bureau of Reclamation, Indianola, Nebraska, September 9, 1949, and then publicly opened for furnishing labor and materials and performing all work for the construction of earthwork and structures for Cambridge lateral system, laterals 2.3 to 10.6 and sublaterals, Frenchman-Cambridge Division, Nebraska, Missouri River Basin Project. The work is situated from about 4 miles west of Holbrook to Arapahoe, Nebraska. Principal items are approximately: Excavation 100,000 cu. yds; furnishing cement and reinforcement and placing 900 cu. yds. concrete; furnishing and installing 18,900 lbs. gates and miscellaneous metalwork; furnishing and laying 4,500 lin. ft. concrete pipe; and other work. Time allowed for completion will be 330 days. For particulars, address Bureau of Reclamation, Indianola, Nebraska; or Building 1-A, Denver Federal Center, Denver, Colorado.

MICHAEL W. STRAUS, Commissioner.
(319)

OFFICIAL PROPOSALS

SUB BIDS WANTED

For clearing and snagging approximately 6.5 miles, or any part thereof of Steele Bayou, near Vicksburg, Mississippi. Interested parties contact Inland Construction Co., Inc., P. O. Box 507, Rosedale, Mississippi, Telephone 13. (278)

CONTRACTORS

Watch this Section

for New Projects

Publish your announcement thru the "Proposals Section" of Engineering News-Record and get their bids.

OFFICIAL PROPOSALS

Bids: September 15, 1949 (318)

Sewage Treatment Plant

COMMONWEALTH OF MASSACHUSETTS
METROPOLITAN DISTRICT
COMMISSION

Sealed proposals will be received at the office of the Metropolitan District Commission, 20 Somerset Street, Boston, Mass., until 1:00 P.M., Eastern Daylight Saving Time, September 15, 1949, and then at said office publicly opened for Contract No. 140 for the construction of a portion of the Nut Island Sewage Treatment Plant in the City of Quincy, Mass. Sub-bids will be received until 12 o'clock noon, Eastern Daylight Saving Time, September 13, 1949. The work includes the construction of the superstructure of the main building; the caring for and installation of equipment furnished by the Commission; and the doing of all piping, plumbing, electrical, heating and ventilating work, painting and other appurtenant work. Each general bidder shall deposit cash or a certified check as security in the amount of $28,000. A bond in at least the full amount of the contract will be required of the successful general bidder to secure the faithful performance of the contract, and for the payment of all persons performing labor or furnishing materials in connection therewith. All bids for this project are subject to and must be prepared and submitted in accordance with the provisions of Chapter 480, Acts of 1939 and Chapter 699, Acts of 1941. Record copies of sub-bids filed with the Commission must be accompanied by bid security in the amount stipulated in the Information for Bidders. Special attention is called to the requirements as to conditions of employment to be observed and to the minimum rates of wages prescribed under the provisions of Chapter 461, Acts of 1935, by the State Commissioner of Labor and Industries, for the construction of this public work. A schedule of such rates is incorporated in the contract documents and is on file and may be obtained at the office of the Metropolitan District Commission. The information for bidders, forms of proposal, contract and performance bond, and plans and specifications, may be examined at the above address, and copies thereof obtained from Karl R. Kennison, Chief Engineer of the Construction Division, upon the deposit of $50, to be refunded only to bidders or to others returning them within ten days after the opening of bids. The site of the work may be seen by applying at the office of the Head Construction Engineer, at Nut Island, Quincy, Mass. The Commission reserves the right to waive any informality in or to reject any or all proposals. No bidder may withdraw his bid within thirty days after the actual date of the opening thereof. A proposal which includes for any item a bid that is abnormally low or high may be rejected as unbalanced.

WILLIAM T. MORRISSEY,
Commissioner

August 4, 1949

Bids: October 3, 1949 (316)

Sewage Treatment Plant Additions

ILLINOIS, ROCKFORD—THE SANITARY DISTRICT OF ROCKFORD, 3300 Kishwaukee Street.

CONTRACT A—STUCTURES AND EQUIPMENT—One 55′ diameter digester, four 75′ diameter sedimentation tanks, sludge pumping station, 3 control chambers, drainage building, underground piping, excavation for 3 sludge lagoons and ditch, roads and sidewalks, miscellaneous work items, etc. Work includes approximately 81,500 cu. yds. excavation, 3,300 cu. yds. concrete, 400,000# steel reinforcement, 20,500# structural steel, misc. steel and wrought iron, 4,700 bbls. cement, iron castings, steel floor gratings, meters, valves, piping, fencing and other items of material and equipment.

CONTRACT C—ELECTRICAL WORK

Bids close Monday, October 3, 1949 at 1:00 P.M. Central Standard Time. Cash, bidder's bond or certified check for 5% of bids. Engineers: Greeley and Hansen, 220 S. State St., Chicago 4. Plans and specifications available upon $20.00 deposit at Sewage Treatment Plant, Rockford, or Engineers' Office, Chicago, which sum is refundable to bona fide bidders.

THE SANITARY DISTRICT
OF ROCKFORD
H. A. Riedesel, District Engineer

OFFICIAL PROPOSALS

Bids: October 3, 1949 (317)

Trunk Sewer Extension

ILLINOIS, ROCKFORD — The Sanitary District of Rockford, 3300 Kishwaukee Street.

Sanitary Sewers in Quadrant #1 totaling 3.2 miles of 8″ to 21″ diameter pipe, 1,000 feet underdrains, 12,553 feet concrete cradle encasement, 2,394 cu. yds. rock excavation, 50 manholes, etc.

Bids close Monday, October 3, 1949 at 1:00 P.M., Central Standard Time. Cash, bidder's bond or certified check for 5% of bids. Engineer: Arnold Lundgren, 1234 Fourth Ave., Rockford; Consulting Engineers: Greeley and Hansen, 220 S. State St., Chicago 4. Plans and specifications available upon $20.00 deposit at Sanitary District office, which sum is refundable to bona fide bidders.

THE SANITARY DISTRICT
OF ROCKFORD
H. A. Riedesel, District Engineer

Bids: September 21 and 22, 1949 (321)

Sewage Disposal System and Sewer Improvements

City of Tampa, Florida

Proposals are invited by the City of Tampa, Florida for construction of portions of the Sewage Disposal System and Sewer Improvements and will be received in the regular meeting place of the Board of Representatives until the following times:

Sewer Improvements	10:00 AM, EST, Sept. 21, 1949
Krause Street Pumping Station	2:30 PM, EST, Sept. 21, 1949
River and Channel Crossings	10:00 AM, EST, Sept. 22, 1949
Sewage Treatment Plant	10:00 AM. EST, Sept. 22, 1949
Intercepting & Trunk Sewers	2:30 PM. EST, Sept. 22, 1949

Plans and contract documents may be examined and obtained at the office of the Superintendent of the Department of Public Works, City Hall, Tampa, Florida and at the office of Greeley and Hansen, Engineers, 220 South State Street, Chicago, Illinois.

City of Tampa, Florida
By Curtis Hixon, Mayor

Dated August 10, 1949

Bids: September 12, 1949 (322)

Remodeling Incinerator

NOTICE TO CONTRACTORS

Sealed bids for the Remodeling of the Incinerator of the Village of Valley Stream, Nassau County, New York, will be received by the Board of Trustees, at the office of the Village Clerk, Village Hall, Village of Valley Stream, Nassau County, New York, on September 12th, 1949, until eight P.M. (E.D.T.) and will be publicly opened and read aloud at a meeting of the Board of Trustees, Village of Valley Stream, Nassau County, New York.

The Information for Bidders, Form of Bid, Form of Contract, Specifications, Form of Performance Bond and Plans, may be examined at the office of the Village Clerk, Village Hall, Village of Valley Stream, Nassau County, N. Y., or at the office of the Consulting Engineer, Henry W. Taylor, 11 Park Place, New York, N. Y. and copies thereof can be obtained upon payment of Twenty-five Dollars ($25.00) for each set, checks made payable to Fred A. Clemenz, Village Treasurer. A refund of Fifteen Dollars ($15.00) will be made for each set to each bidder or non-bidder upon return of such set in good condition within ten **(10) days after the receipt of bids.**

The Village of Valley Stream reserves the right to waive any informalities in any bid, to accept any bid, or to reject any or all bids.

Each bidder must deposit with his bid security in an amount of not less than five percentum (5%) of the base bid in the form and subject to the conditions provided in the Information for Bidders. Such check is to be made payable to Fred A. Clemenz, Village Treasurer.

No bidder may withdraw his bid after acceptance thereof by the Village of Valley Stream, or within forty-five (45) days after the actual date of the opening thereof.

FLETCHER CHALMERS
Village Clerk

Dated August 15, 1949

EMPLOYMENT

AND OTHER BUSINESS OPPORTUNITIES

UNDISPLAYED RATE

(Not available for equipment advertising)

$1.20 a Line, minimum 4 lines. To figure advance payment count 5 average words as a line.

INDIVIDUAL EMPLOYMENT WANTED undisplayed advertising rate is one-half of above rate, payable in advance.

Box Numbers in care of our New York, Chicago and San Francisco Offices count as one additional line.

Replies are forwarded each day as received at each of the offices mentioned without additional charge.

Discount of 10% is allowed if full payment is made in advance for 4 consecutive insertions.

DISPLAYED RATE

The advertising rate is $11.50 per inch for all advertising appearing on other than a contract basis. Contract rate quoted on request.

An advertising inch is measured 7/8 inch vertically on one col., 3 col.—30 inches to a page. E.N.R.

REPLIES (Box No.): Address to office nearest you
NEW YORK: 330 W. 42nd St. (18)
CHICAGO: 520 N. Michigan Ave. (11)
SAN FRANCISCO: 68 Post St. (4)

POSITIONS VACANT

WANTED—ENGINEERS, Architects, Draftsmen experienced in the design of sewers, sewage treatment plants, water treatment plants and industrial buildings. Also engineers to supervise construction. State qualifications, experience. Salary requirements and date available. P-1155, Engineering News-Record.

ESTIMATOR: EXPERIENCED quantity survey man and project manager. Virginia-Carolina area. P-9549, Engineering News-Record.

SUPERINTENDENT: EXPERIENCED in private and public buildings. Virginia-Carolina area. Give full experience, references and salary expected. P-9550, Engineering News-Record.

ESTIMATOR—FOR General Building Contractor. We need two men who are qualified to prepare quantity surveys covering items like excavation, concrete, forms, brick work, tile partitions, glazed tile, carpentry, etc. Knowledge of pricing not necessary. We figure only building projects running over $5,000,000.00, mostly hospital construction. Will pay top salary for qualified men. Only experienced, high type men considered. Write in confidence giving education, experience, age, salary desired, when available. Fleisher Engineering and Construction Co., P. O. Box 68, Kensington Station, Buffalo, New York.

UNUSUAL OPPORTUNITY — Graduate Civil Engineer, age 35 or under, wanted for responsible permanent position with large manufacturer of surveying and drafting instruments and associated equipment and supplies located in Chicago. Must have ability to quickly understand products of the type indicated and write accurate catalog descriptions, instruction sheets, use and care information, etc. Previous technical writing experience desirable but not necessary. Salary $36000 to $5000, depending upon length of training required. Box 9674, Engineering News-Record.

WANTED: AN experienced Engineer for a City of 22,000 population, salary $4,000.00 Address: Carl E. Pratt, Sr., Mayor, Hastings, Nebraska.

SHOP SUPERINTENDENT for medium-sized mid-western structural fabricating shop, specializing in bridge and building work. Applicant must be thoroughly experienced in production, have good working knowledge of shop equipment and have ability to handle and lead men. Good opportunity. P-9740, Engineering News-Record.

HELP WANTED — Draftsman, structural. Structural steel detailers and checkers. Out of town work. Steady work, vacations, fine working conditions. Only experienced men need apply. Give age, education, experience and salary expected in first letter. Our men know of this ad. P-9733, Engineering News-Record.

WANTED: DRAFTSMEN, neat, fast, good letterer with experience in computing and plotting property surveys, for work on large land acquisition project. Location: Kansas. P-9719, Engineering News-Record.

WANTED: EXPERIENCED Structural steel draftsman, location Oklahoma. Reply P-9547, Engineering News-Record.

POSITIONS WANTED

PILOT WITH requirements—4300 flying hours. Desires permanent position. Will answer all requests. Owen C. Jones, 48415 Ford Road, Plymouth, Michigan.

DRAFTSMAN - CHIEF

Structural Steel Fabricating Shop

One capable of directing force of twenty men. Must be thoroughly experienced in modern shop methods. This company has been in business 30 years. Offices air conditioned. Steady work assured to right man.

THE MARYLAND STEEL PRODUCTS CO.
P. O. Box 1997 Baltimore 3, Md.

STRUCTURAL DESIGNER

WANTED

Experienced in coal and ore bridges, dock cranes and material-handling equipment. Must be capable of preparing stress sheets and layout work for detailers. Permanent connection. Give qualifications, experience, and salary expected.

Address A. J. Lichtinger,
c/o THE WELLMAN ENGINEERING CO.
Cleveland 4, Ohio

POSITION AVAILABLE

Civil Engineer, 35 to 45 years old to supervise project engineers on building work, waste disposal and general civil engineering design for chemical company located in East. Furnish detailed resume of experience and education, also salary requirement, in reply.

P-9634, Engineering News-Record
330 W. 42nd Street, New York 18, N. Y.

When

Answering

BOX NUMBERS...

to expedite the handling of your correspondence and avoid confusion, please do not address a single reply to more than one individual box number. Be sure to address separate replies for each advertisement.

POSITIONS WANTED

SUPERVISION OR Management position — Varied background in supervision of industrial construction. Commercial pilot. Will supply four-passenger plane. Prefer South or Southwest. PW-9669, Engineering News-Record.

CONSTRUCTION AND Maintenance Engineer. C.E. graduate. Broad experience in design, construction, maintenance, contracting, purchasing, etc., all types of commercial and industrial buildings. Former contractor; good business background. Speaks Spanish. Wishes position here or Latin America. PW-9589, Engineering News-Record.

DRAFTSMAN GENERAL, good structural. Also machinist, millwright and licensed embalmer. Want foreign work. PW-9579. Engineering News-Record.

STRUCTURAL ENGINEER — registered Indiana and Michigan, other registrations pending. Thirteen years Structural Engineering and Architectural experience includes power plants—commercial and industrial structures—stores and homes. Will consider working on fee—hourly-partnership-or salary basis. Write PW-9627, Engineering News-Record.

CONSTRUCTION SUPERINTENDENT — 28 years in complete charge of Projects for general contractors. Consisting of: Dirt and Concrete dikes and dams, Flood Walls, Pumping stations, paving, bridges, sewers, sewage disposal, water treatment and industrial plants, power houses and coffer dams. At present in charge of paving project. Married and will go anywhere. Available soon. PW-9632, Engineering News-Record.

EQUIPMENT SUPERINTENDENT: master mechanic, 25 years experience heavy construction, large spreads, 15 yrs. foreign experience. Can be used as equipment consultant. Prefers foreign work—anywhere. Harbors, airports, railroads, roads, industrial plants, etc. PW-9673, Engineering News-Record.

ESTIMATOR AND Supervisor of construction with Civil Engineering degree desires position with aggressive contractor, preferably in south or southwest. PW-9670, Engineering News-Record.

CONSTRUCTION SUPERINTENDENT and engineer, 17 years experience as superintendent in charge of public, commercial, industrial, bridges and road projects, graduate engineer, excellent record, desires location in south or mid south. Address PW-9336, Engineering News-Record.

CAPABLE MAN desires connection with structural fabricating shop. Interested only in capacity of Chief Draftsman. PW-9614. Engineering News-Record.

ON THE job training as land surveyor, western New York by young married veteran; three years mechanical drafting experience. PW-9466, Engineering News-Record.

ESTIMATOR-RIGGING-Printing presses. Machine tools. 25 years experience. PW-9687. Engineering News-Record.

SUPERINTENDENT OF Construction, 20 yrs. experience heavy foundations, public and commercial buildings, and power projects. Available Aug. 20. Used to getting work done, cost conscious. PW-9702, Engineering News-Record.

CONSTRUCTION SUPERINTENDENT And engineer, 17 years practical experience all phases public, industrial, commercial bldgs., bridge and road construction, married, clean record, prefer mid-west location. Address PW-9710, Engineering News-Record.

SEASONED CONSTRUCTION Executive—age 45, thoroughly experienced in estimating, buying, project management and general administration. Field and office. Experienced in all types, sizes, commercial, industrial and institutional work, especially large veteran hospitals, housing projects and public works buildings. Desire connection with financially sound contractor looking towards expansion. Salary to suit. PW-9732, Engineering News-Record.

STRUCTURAL ENGINEER graduate 7 yrs. experience design industrial structures bridges well qualified indeterminate struct. desires responsible position with architect or engineer located in the south. PW-9730, Engineering News-Record.

DRAFTSMAN 3 years of layout and section of process piping, Thoroughly exp'd in methods of fabricating piping. Knowledge of structural steel. Also 3 years of layout and detailing and mechanical equipment, some college, resident of N.Y.C. Consider traveling. PW-9689, Engineering News-Record.

(Continued on page 63)

POSITIONS WANTED

(Continued from page 62)

GENERAL OR Job Superintendent. 25 years experience: organizing, supervision, purchasing, estimating—sewers, disposal plants, water works, highways, tunnels, air bases, subways, industrial plants. PW-9746, Engineering News-Record.

STRUCTURAL ENGINEER, registered, 25 years experience buildings, subways, foundations, docks, indeterminate analysis, etc., seeks permanent responsible position, office or field. PW-9747, Engineering News-Record.

PROJECT MANAGER: Gen. Supt. desires connection. 22 years experience. Registered Engr. 3-states. Dams-power plans-industrial bldgs. Hospitals-tunnels-bridges. Wharfs-docks-pile driving. Resume of experience and reference furnished upon request. Willing to travel. PW-9744, Engineering News-Record.

ACCOUNTANT, 40, wants responsible job with reliable company. Full experience in all phases of construction paper work including timekeeping, payroll, purchasing records, costs, material and equipment records, field office and general office books. Anywhere. J. J. Quirk, 433-101 Street, Brooklyn, N. Y. C.

PART TIME WORK WANTED

STRUCTURAL ENGINEER, registered, 25 years buildings, foundations, docks, tunnels, indeterminate structures, etc. PTWW-9583, Engineering News-Record.

CONTRACT WORK WANTED

CONTRACTORS—CONTRACT placing reinforcing steel. No job too big. South, Southeast, South-west. CW-9743, Engineering News-Record.

WANTED

WANTED

Good Used Standard Gauge

DIESEL-MECHANICAL and DIESEL-ELECTRIC

LOCOMOTIVES

All capacities

Advise condition, location, and prices

W-9749, Engineering News-Record
520 N. Michigan Ave., Chicago 11, Ill.

WANTED

DETACHABLE ROCK BITS and DRILL STEELS

IR and Timken. Advise sizes, quantity, condition and how packaged.

W-9700, Engineering News-Record
330 W. 42nd Street, New York 18, N. Y.

WANTED

DREDGES 8", 10", 12" AND 16"

Portable, and Regular, any age, prefer with diesel electric drive. We would also like to offer a 10" dredge, $8500, 12" dredge and a 16" dredge.

Photograph on request. *Terms to suit.*

THE EVEREADY SUPPLY COMPANY
803-5 Housatonic Ave. Bridgeport 4, Conn.

WANTED

One used grubber for TD-18 International Tractor, hydraulic controlled. Also—One Ottawa Buzz Master Saw.

FRED McDOWELL
1815 Sixth Avenue Neptune, N. J.

LEGAL NOTICE

Proposals addressed to the City Purchasing Agent will be received by the City of Akron, Ohio, at the office of the Purchasing Agent, Room 205 Municipal Building, Akron, Ohio, for the sale of the following equipment:

Item 1. *Turbine-driven Generator*

Steam Turbine. DeLaval—Type 100 T-C—Steam Pressure 170 psi — speed 5000 R.P.M.—Serial No. 19909.

Synchronous Motor-Generator. General Electric Type AT-1-12-75-600—Form S—Amp 20—Volts 2200—Cycles 60—H.P. 92 —Speed 600 R.P.M. Serial No. 695503.

Item 2. *Turbine-driven Generator and Pump—Combined Unit*

Steam Turbine. DeLaval—Type 100 T-C—Steam Pressure 170 psi — Speed 5000 R.P.M.—Serial No. 19908.

Synchronous Motor-Generator — General Electric Type AT-1-12-75-600—Amp. 20—Volts 2200—Cycles 60—H.P. 92—Speed 600 R.P.M.—Serial No. 695502.

Centrifugal Pump. DeLaval—Type P20—Speed 600 R.P.M.—Rated 8350 G.P.M. against 30 ft. head—Serial No. 19908.

Item 3. *Turbine-driven Pump*

Steam Turbine. DeLaval—Type T-C—Steam Pressure 175 psi—Speed 3420 R.P.M.—Serial No. 29767.

Centrifugal Pump. DeLaval—Two Type P20 — In Parallel — Speed 410 R.P.M. — Rated 17500 G.P.M. against 12 ft. head —Serial No. 29767.

Item 4. *Motor-driven Pump*

Induction Motor. General Electric—Type 1-6-200-1200 — Form M — Volts 2200 — Cycles 60—H.P. 200—Speed 1200 R.P.M. —Serial No. 721856.

Centrifugal Pump. DeLaval—Type 200 M.P. 12/10—Rated 3700 G.P.M. against 220 ft. head—Serial No. 222672.

Item 5. *Locomotive Crane*

McMyler—Type B—20 Ton Steam-operated locomotive Crane with 45' Boom and 1½ yd. Clam Shell Bucket—Serial No. 3232.

Item 6. *Misc. equipment as follows:*

a. One motor-driven 2000 G.P.M. Pumping Unit with 175 H. P. Motor
b. Nine small electric motors
c. Two 60-ton Hydraulic Jacks

Equipment under Items 1 to 4 and Item 6 have been removed from the Pumping Station, the various units separated and mounted on skids for easy handling and may be inspected at the yard of the Akron Water Works, 565 Johnston Street, Akron, Ohio.

The Locomotive Crane (Item 5) may be inspected at the Akron Water Works Siding, northeast of Kent, Ohio.

Photographs of equipment before removal will be sent to you on request. All communications are to be addressed to G. McQuiggan, Purchasing Agent, Room 205 Municipal Building, Akron, Ohio.

Purchaser must remove equipment within thirty (30) days after being notified of award.

Purchaser must, at his own expense, furnish all labor and material required to remove equipment from present locations.

Ten (10) percent of purchase price must accompany bid. Remainder of purchase price must be paid before equipment is removed.

The City of Akron, Ohio, through its duly authorized and constituted officials, reserves the right to reject any or all proposals and to waive informality in any proposal.

THE CITY OF AKRON, OHIO

By:* G. McQuiggan, *Purchasing Agent

FOR SALE

CONCRETE PLANT

Concrete mixing plant consisting of three Smith tilting two yard mixers with five compartment aggregate bin, cement silo and elevator, weight scales, tank etc. Plant semi-automatic with electric controls on all operations. All above mounted on structural steel frame.

Can be inspected under operating conditions at McConnell Lake Dam, Moor Lake, Ont.

ATLAS CONSTRUCTION CO. LTD.
Westmount, Quebec

SHANNON'S SPECIALS

FOR ALL CONSTRUCTION JOBS

NEW U. S. ARMY HEAVY DUTY 10-INCH HAND OPERATED

KLAXON HORN

LOUD GROWL DEMANDS IMMEDIATE ATTENTION

A device that gives loud warning when blasting or for any construction or mining job where a positive warning signal is needed. Independent of any power source. Can be heard great distance.

$10.00 VALUE **$3.75**

SHIP CHG. 50c EXT. EACH.

U. S. ARMY SURPLUS "DU PONT"

BLASTING GENERATORS

Plunger type, will fire 1 to 20 caps. These generators are used and in need of minor adjustment or slight repair. **$5.75 EACH**

SHIP. FRT. OR MTR. TRUCK F.O.B. PHILA.

TAMPERS • DIGGERS • DRIVERS

1⅛" x 6" Shank, fits std. hammers. Each tool brand new and guaranteed.

The government buys only the best. Replace your old tools at a fraction of their regular price. These tools are army surplus.

REG. $14.50
TAMPERS 8" x 8" With Stem **$6.00**

REG. $9.30
CLAY SPADE 5½" x 8½" **$3.75**

REG. $18.00
SHEATHING DRIVER $6.00

ALL TOOLS F.O.B. PHILA.

SPEAR AND SPADE END—13 Lbs.

RAILROAD TAMPING BAR

REGULAR $5.50 VAL. **$1.95** FOB PHILA.

3 FOOT HEAVY DUTY

STAR POINT ROCK DRILL

1⅛" Bar—2" Cutter—$3.00 Val. FOB Phila. **$1.00** EA.

U. S. ARMY—6 LB. DOUBLE POINT or POINT & CHISEL **PICKS**

Your Choice **$9.00** A DOZEN FOB PHILA.

BRAND NEW HICKORY
PICK HANDLES
Straight Grain—Smooth Finish. FOB Phila. **$5.00** A DOZ.

WILL SHIP RATED FIRMS OPEN ACCOUNT FOB PHILA. OTHERS PLEASE SEND CHECK

J. JACOB SHANNON & CO.
214 N. 22nd St. Phila. 3, Pa.
THE OLDEST EQUIP. HOUSE IN PHILA.

If there is anything you want

or something you don't want that readers can supply—or use—*advertise it in the*

Searchlight Section

NEW PARTS

FOR

Tractors, Graders, Scrapers, Shovels, Cranes, Trench Diggers, etc.

(Allis Chalmers, Caterpillar, International, Barber-Green, Insley, Buckeye, Northwest, Loraine, Turnapull.)

Cutting Edges All Sizes—Fairleads

CEMENT MIXERS

2 Ransome and 1 Rex

Excellent Condition

JULIUS HEBENSTREIT, INC.

56-15 58th St. Maspeth, L. I.
Tel. DAvenport 6-1461
Cable: Habenjul New York

FOR SALE

CRANES

Colby Model 200 electric powered Whirley cranes, 45 ton at 30 foot radius. Excellent condition.

GENERATORS

1000 KW Elliott Generators, New, 720 RPM.

DIESEL ENGINES

1600 HP General Motors Engines, 720 RPM.

PACIFIC BRIDGE COMPANY

333 Kearny Street San Francisco, Calif.

FOR SALE

7—Terra Cobra Scrapers, 150-HP Cummins engines. These machines new 1946-1947. Less than one year work. Latest Improvements including cabs, 12-c.f. air compressors and 24-V generators, drive chains enclosed. All overhauled and appearance like new. Will sell in lot or separately.

All above subject to prior sale and

F.O.B. St. Paul, Minn.
Terms can be arranged

Address

R. M. Knox—B. S. Crooks

424 Endicott Bldg. St. Paul, Minn.

SURPLUS BARGAINS

1—15 KW International Diesel Generator 120-240 v 60c radiator, instruments like new $1600
1—15 KW Hill Diesel Generator 120-240 v 60c radiator, instruments new never run $1600
5—15 KW Onan-Ford Gas Generator 115 v 60c reconditioned, good condition $550
2—600 HP Washington Marine Diesel, 277 rmp, all component parts and spares. New, export crated $27,500
1—1440 HP GM, Model 16-278a complete with reverse gear, compressor, etc $12,500
2—Superior Diesels MR8, 200 hp 1200 rmp Twin-Disc 3to1 red, gear with props. Condition perfect, pair $6,000
4—Westinghouse Reduction Gears, 2to1, for 1800 HP Diesel, New. Never used $3,500
Large lot of pumps, exhaust fans, DC Motors, switchboards, etc. We have equipment off over 35 LCIS LSMS LSTS

WOOLDRIDGE COMPANY

Box 54 Phone 2-2283
JEFFERSONVILLE, IND.

FOR SALE or RENT ALL LATE MODELS

1—N. W. Shovel, 2½ c.y. new Oct. 1946
1—N. W. Shovel, 1½ c.y.-new April 1946
1—P & H Dragline, 1½ c.y., new June 1948
1—Allis Chalmers Tractor Model HD19H, new May 1948
5—D W 10's—used 2500 hours
1—Caterpillar Auto Patrol #12—9K4626
1—Caterpillar D8 Angledozer #8R8933
1—Caterpillar D7 Bulldozer 4T5988

WILLIAMS CONSTRUCTION CO.
Box 145, Middle River, Baltimore 20, Md.
Phone: Essex 1310

FOR SALE

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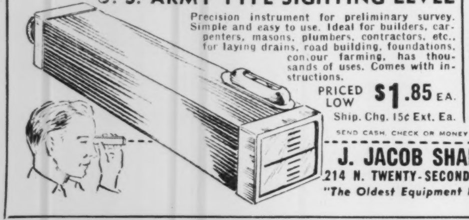

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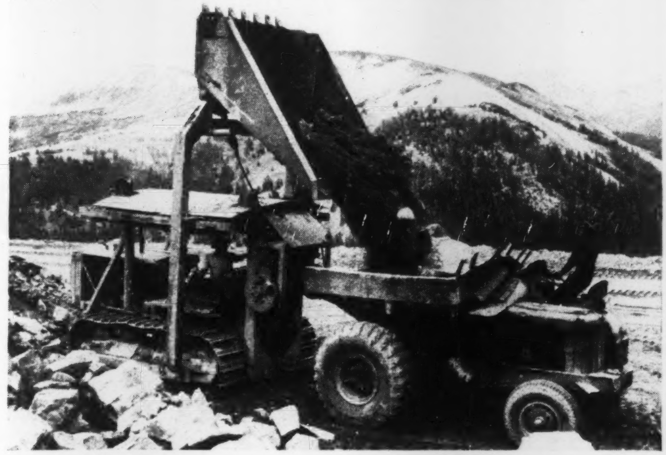


Large-Capacity Loader Permits Straight-in-Line Mucking

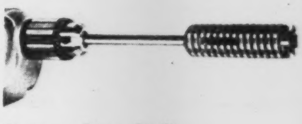
Overshot loader converts any late model crawler-type tractor into a high-speed loading unit. Designed as a mucking unit for tunnel work, it can also be used for stockpiling sand and gravel, for quarrying operations, for large-scale snow removal, and for other heavy-duty loading operations. When equipped with special forks, it can be used for handling timbers, poles, and ties. One lever provides the operator with complete control of the loader. The Austin loader is 100-percent mechanically operated, with power from the tractor used to actuate two hubs on which a wide, steel belt is wrapped or unwrapped. This results in variable speed drive—slow at the dozing position, accelerating as the load is raised, with maximum speed reached at the extreme dumping position. Travel is cushioned by twin, enclosed coil springs which prevent jar and assist in returning the bucket to its loading position. The Austin loader is made in three models—the 6-C has a 1½-yard bucket; the 7-C, a 2½-yard bucket; and the 8-C, a 4-yard bucket. The 6-C requires a clearance of 17 feet 9 inches; the 7-C, 18 feet 9 inches; and the 8-C, 21 feet 10 inches. Overall widths are 6, 6, and 7 feet, respectively.—John Austin, Inc., Longmont, Colo.

Hydraulic Tire Remover

Hydraulic tire remover will be a boon in changing large tires used on heavy-duty construction equipment. Designed to facilitate breaking the bead of these giant tires from the rims, the tool will operate on any tapered bead rim of Goodyear design. The equipment consists of a 19-inch-long ram assembly weighing 25 pounds, together with a pump and hose which provide the hydraulic pressure. Pump and hose weigh 16 pounds. Unit works on both front and back side of rim making it possible to loosen damaged tires from rim so as to effect quick changes right on the job. Under test, the tool has withstood 18,000 pounds pressure at one spot on rim to break tire bead loose.—The Goodyear Tire & Rubber Co., Akron, Ohio.

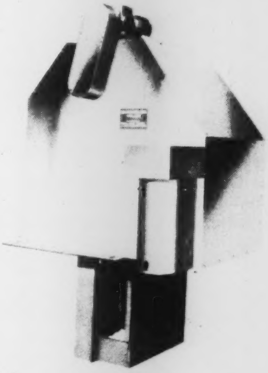
Three New Air Tools

Latest additions to the Blue Brute line of air tools include a clay digger, a trench digger, and a breaker. Features of the new tools include four-bolt handle, built-in lubricator, replaceable bronze cylinder bushing, replaceable chuck bushing, and interchangeable handles. Two major advancements incorporated in the new design are: a streamlined latch-type retainer, enabling trimming and breaking in close quarters without damaging the retainer fulcrum pin because there are no side projections; and a new, simple metering-type valve which is unaffected by wear. The new design also provides larger bearing surfaces and shorter piston travel.—Worthington Pump & Machinery Corp., Harrison, N. J.



Rotary Core Drill

New style rotary core drill has All-Worm feature which carries pulverized material away from the tip as soon as drilling begins. Results in less heat, less friction, faster drilling, and longer life. Drills are available with diameters of 1 to 2¼-inches.—Concrete Termite Rotary Drill Co., 2081 Foothill Blvd., Pasadena, Calif.



Automatic Sewage Screen

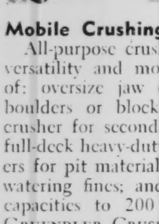
Mechanically cleaned bar screen with grinder is full automatic and adaptable for minimum channel widths and settings, or for parallel multiple installations for large flows. Frame is easily inserted into slots formed in concrete channel walls, and is designed for channels from 2 feet 6 inches to 5 feet wide, with minimum depth setting at 2 feet 6 inches. Special feature is pivoted rake which causes the teeth to enter the bottom of the screen bars horizontally. As rake rises, it automatically drops and

(*Continued on page 70*)

withdraws 45-degrees radially, positively releasing the screenings into the sorting tray. Shear pin protection is provided for overloads. Each unit is furnished complete with automatic electrical control.—AMERICAN WELL WORKS, AURORA, ILL.

Mobile Crushing Plant

All-purpose crushing plant features versatility and mobility. It consists of: oversize jaw crusher for gravel, boulders or block quarry rock; roll crusher for secondary crushing; three full-deck heavy-duty screens and washers for pit material; sand drag for de-watering fines; and apron feeders in capacities to 200 tons per hour.—GRUENDLER CRUSHER & PULVERIZER CO., 2915 N. MARKET ST., ST. LOUIS 6, MO.

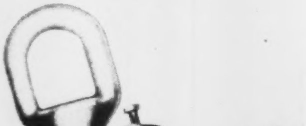


All-Hydraulic Mower

The Davco Hydro-Mower is an all-hydraulic heavy-duty unit for use with Oliver wheel-type tractors. The curb lift gives the mower a minimum curb lift of 18 inches. The bar lift permits operation of the cutter bar in a position of 55 degrees below to 95 degrees above horizontal. At 1,500 rpm. the hydraulic pump will deliver at least 15 gallons per minute at 800 pounds.—THE OLIVER CORP., 19300 EUCLID AVE., CLEVELAND 17, OHIO.

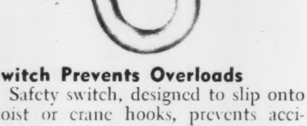
Dehumidification Equipment

Removal capacity of the Model J-150 dehumidification equipment is 700 lb. of water per day from air registering 90 deg. F. drybulb or 75 deg. F. wetbulb. It is a dual-adsorbent-type machine employing activated alumina as the drying agent and is entirely automatic in operation. This equipment is of value for dehumidifying filtration plants, underground pump rooms or other places where dripping walls, sweating pipes or wet floors might interfere with proper operation of equipment or the efficiency of personnel. It can be adapted to steam, gas or electricity for providing the reactivating heat. The Model J-150 is 5 ft. wide, 8½ ft. in length, 7½ ft. in height, and weighs approximately 4,500 lb.—PITTSBURGH LECTRODRYER CORP., P. O. BOX 1766, PITTSBURGH 30, PA.



Switch Prevents Overloads

Safety switch, designed to slip onto hoist or crane hooks, prevents accidental overloads. The U-shaped tool steel bar of the Dyna-Switch automatically opens the circuit, preventing operation of the equipment, if the hoist capacity is exceeded. The circuit remains open until the operator presses the switch to reverse it. He must then remove the excess load before the hoist will lift the load. The Dyna-Switch can be set to cut off at any poundage between 500 and 10,000. If it is not desired to attach circuit to motor for cut-off, a special switch can be supplied for attachment to a red warning light, bell, or a combination of both. Capacity of the unit is easily adjusted in the field.—W. C. DILLON & CO., INC., 5410 W. HARRISON ST., CHICAGO 44, ILL.



Ball-Bearing Belt Conveyor

Features of the Sealmaster ball-bearing belt conveyor carrier include high strength, lightweight construction, low power requirement, minimum maintenance, one-shot low-pressure lubrication, interchangeable parts, and no tools or adjustments are required. Other features include one-piece welded-steel frames designed to tilt in the direction of the belt travel and to keep belt centered without need for guide rollers, an inverted angle base and specially designed end brackets to shed material and keep rollers free. Smooth-running ball bearings and hollow live shafts, turning with the rollers, reduce friction and power requirements and prolong the useful life of the carrier.—STEPHENS-ADAMSON MFG. CO., AURORA, ILL.

Light-Duty Asphalt Spreader

Spreader for hot or cold-mix asphalt or stone base courses works in close quarters. The device is drawn by a truck which dumps its load into the spreader and travels forward to spread the material. Depth of spread is adjustable from 1 to 8 inches; widths are furnished in 7 and 9 feet, with blocking possible for any lesser widths. An agitator for use with cold mixes is standard on the 9-foot model, and available as optional equipment on the 7 footer. The spreader is available in 4 or 5-foot widths for sidewalk or widening work where overall width must be kept below 8 feet.—W. E. GRACE MFG. CO., 6000 S. LAMAR ST., DALLAS 15, TEXAS.

Mobile Radiotelephone

New mobile radiotelephone unit features small size, low cost, reliable performance, and versatility. The Model FT-145-10 has a power output of 10 watts at any frequency in the 152 to 162 megacycle band. It draws 7.3 amps standby and 23.9 amps transmit; has an overall size of 5 3/16 x 12 3/16 x 14⅛ inches; and weighs 27½ pounds without cables and control unit.—FEDERAL TELEPHONE & RADIO CORP., 100 KINGSLAND ROAD, CLIFTON, N. J.

High-Strength Fire Hose

High-strength fire hose is highly resistant to acids and acid fumes, oil, and gasoline. Designed primarily for fire protection and general washdown service, it is also practical for heavy-duty service in street cleaning, sewer flushing, and paving operations. The hose is constructed with a natural rubber tube, two plies of chemically treated cotton-cord fabric, and a Neoprene cover. It has a resistance of 400 psi.—UNITED STATES RUBBER CO., ROCKEFELLER CENTER, NEW YORK 20, N. Y.

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READER COMMENT

Soils Pollution Questioned

Sir: Some of the views, on stream pollution by soils which Harold A. Kemp, director of sanitary engineering for the District of Columbia, presented before the Interstate Commission on the Potomac River Basin on April 21-23 at Bedford Springs, Pa., are reported on pp. 64 and 65 of the June 9 issue.

I question Mr. Kemp's conception of pollution of water by soils in several respects. I should point out first that water supply is not my field and my impressions are based upon some 30 years of flood-control and river-regulation work on the lower Mississippi plus a general interest in fish and wildlife and other aspects of the Mississippi Valley.

The assumption that our rivers carry more bed-load, silt and suspended matter than in former years is questioned. This idea arises in the first place on the basis that the rivulets, brooks and tributaries are the main source of material, rather than the caving banks of the main stream. Actually, it seems probable that all material moved by water is picked up and laid down time after time, with the finer material going the greatest distance; that is, even suspended matter probably acts thus. Otherwise the concentration of such material would increase as one proceeds downstream. This we know is not so.

In the case of the Mississippi (with which I am most familiar) there is no reason to suppose that either the bed-load or the suspended silt and clay is greater today than when the river, in its pristine condition, was first viewed by Hernando DeSoto. It is more probable that the Mississippi River today handles less material in both categories because of the moderate reduction in caving banks due to bank revetment. The case for preventing soil erosion stands on its own feet. Just as it has little to do with flood control (except silting up reservoirs) so it may have little to do with pollution, except as it may be that the domestic water supply problem would be simplified if there were no sediment to be removed.

As to the effect of silt and suspended matter on fish, it may be of interest to note that, when the Mississippi overflows its banks, muddy water enters every stream, bayou and lake in the overflow area. These lakes are, and always have been, densely inhabited by many species of valuable game fish, such as the black bass, crappie, and various species of small perch. These fish live for months in the muddy waters and yet, when the waters recede and these bodies of water become clear again, the fish are healthy and vigorous. As for the so-called coarse fish, such as the buffalo and the various catfish, they live in the muddy water continuously with no difficulty whatever just as readily as they live in clear water. Furthermore, there is good reason to believe game fish inhabit the muddy Mississippi all the time, although unfortunately they cannot be caught for sport purposes by the same methods as those employed in clear water.

A bit of evidence is afforded by the bar-fish, sometimes known as the yellow bass, which is regularly caught in the Mississippi by commercial fishermen in nets set for commercial fish. What is reported here for the so-called muddy Mississippi really pertains to a lesser degree to almost any stream anywhere. The finest trout streams this writer has seen in Canada and Maine years ago became muddy and turbid in the early months of the year and quite obviously the various game fish (even the salmon in Maine) can withstand (or perhaps enjoy) this condition for long periods.

As to pollution, the muddy Mississippi arrives at New Orleans with a bacteria count only reasonably above the standards set for good drinking water. As a matter of fact, the muddy Mississippi River water can be, and is, consumed with moderate safety by many people who live or work on the Mississippi. The typhoid rate for this group of persons was probably better than for this section of the country in general, although all I have at this time is this firm impression rather than actual figures. Instead of suspended matter in the water being a harmful influence, I should not be at all surprised to find (if the subject were investigated adequately) that the suspended material exercises a beneficial influence upon water and tends to reduce the bacteria count.

The problem of soil erosion is unnecessarily complicated by dwelling upon some of its assumed subsidiary effects. This tends to divert energy that might be more constructively employed. In the highly-erodible Piedmont area of the South, extending from Virginia to Texas, the light is now beginning to dawn for many that, when the ground slopes exceed a certain inclination, the land should never be put to the plow but should be allowed to grow trees and that, when so used, the land will produce the greatest revenue per acre per year. The use of slash-pine for pulp is accelerating this change in attitude. Even lands with flatter slopes (generally devoted to cattle or cover crops after adequate terracing) appear to offer the prospect of more revenue per acre per year if used to grow trees.

Perhaps there is need for some basic research in order to determine the true facts concerning some of these controversial points.

Walter C. Carey
New Orleans, La.

Ozone Investigations Defended

Sir: The paper, which Mr. Vaughn and I prepared and delivered at the last American Water Works Assn. convention, describing our work with ozone at Whiting, Ind. (ENR June 9, 1949, p.51) was at the invitation of the chairman of the Water Purification Division of the AWWA. This paper will be duly published in the AWWA Journal and all statements made therein we stand by. Our paper represents, in my estimation, a report covering careful investigations, made over a period of five months, using accepted water works techniques and practices. To the best of my knowledge neither Mr. Hann nor Mr. Dado attended the AWWA convention and since I did not furnish them with copies of the paper, I am at a loss to understand the basis upon which they are criticizing it (ENR, Aug. 11, 1949, p. 88).

Other investigators, notably Baylis, have worked with Whiting water and have reported on it. The results of some of this work may be found in Mr. Baylis' book, "Elimination of Taste and Odor in Water," McGraw-Hill Publishing Co., 1935. It might be well to refer to this work when making a critical analysis of our work.

Mr. Hann's statement that "during those months when the present ozone capacity is ample to handle the pollution without supplementary carbon, the city saves $3,000 a month over the cost of treating the same water with carbon alone, representing a saving of $50 per million gallons' appears to substantiate the statement we made in our paper that "it is doubtful that the treatment of the present Whiting raw water can be economically justified."

Leo Besozzi
Consulting Engineer
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